Lettsomian Lecture

ON THE

JRGERY OF THE SPINAL CORD AND ITS MEMBRANES

ing the Third Lettsomian Lecture in 1927 delivered before the Medical Society of London on March 21st, 1927,*

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OF all the ills that human flesh is heir to there none more terrible to bear by the patient by the atives and by the medical attendant himself, than ntinuous pain beyond relief by ordinary therapeutic easures Of such as these are the pain of inoperable alignant disease, especially that of the vertebral lumn and the visceral crises of tabes dorsalis is not to be wondered at therefore that attention s been directed to surgical measures in an attempt find relief for the intractable pain of the one e repeated attacks of pain and vomiting of the other.

SURGICAL MEASURES FOR THE RELIEF OF PAIN.

Dana was the first to propose the division of sterior spinal nerve roots for the relief of severe untic pains and William Bennett was the first to rry out in 1888 the suggested operation He was lowed by Abbe and Munro Horsley Chipault, Mculin and Monod and Giordano all of whom erated for inveterate neu[illegible] and by Faure, in 39, who operated with [illegible] pain in a case of operable carcinoma [illegible] s introduction it s been performed [illegible] ly with varying ccess, chiefly for inveterate neuralgia following upon ury or after amputations, and for the excruciating in in malignant disease of the spine In 1900, ngazzini suggested that the posterior nerve roots ould be cut for the relief of severe lightning pains tabes This suggestion was not acted upon until 08, when at Förster's request, Küttner in a twoge operation cut the seventh, eighth, ninth and nth dorsal posterior nerve roots in a patient ffering from gastric crises with extraordinarily good sults Previous to this date however, Vallas and tte, in 1906, had treated a case of severe gastric ises by stretching the solar plexus, with complete lief for four months

Reference may be here made to intradural and ndural injections of various substances for the lief of gastric crises and lightning pains in tabes ippmann advised the injection of 5 c cm of 1 per nt solution of sodium bromide into the subachnoid space while Hauptmann practised air placement in the spinal subarachnoid space after ithdrawing 90 c cm of cerebro-spinal fluid Both ethods have failed of any result when used at the ational Hospital Lévy, Pope and Brissaud have dvocated the injection of fibrolysin water, alcohol, nd stovaine into the spinal subarachnoid space hile Sicard and Cathelin recommend that the njections should be epidural. Paravertebral injection f alcohol into the splanchnic nerve has also been tried armichael, at the National Hospital, has used an ntravenous injection of hypertonic saline solution 30 c cm of a 30 per cent solution) in a number of ases with immediate good results in the majority of cases No such result was obtained when normal saline solution was used as a control The improvement however, was not permanent, the vomiting remaining unchanged, though it sometimes appeared as if the pain were lessened

SECTION OF THE POSTERIOR ROOTS

Forster's recommendation of posterior spinal root section is based on his conception that the visceral crises are due to an exalted reflex action, and that in order to inhibit this it is necessary to break the nervous arc upon which it depends In his opinion the primary cause of gastric crises is an irritation of the sensory sympathetic fibres from the stomach, which fibres enter the spinal cord through certain of the posterior nerve roots These sensory sympathetic fibres pass to the cœliac plexus then by the rami communicantes to the seventh, eighth, and ninth dorsal posterior spinal roots and from these to the cord It should be remembered however that Forster gave warning that all cases of gastric crises without any pain should be regarded with suspicion and as unsuitable for section of posterior nerve roots He regards these as of vagal origin

Various modifications of Forster's operation have been tried since its introduction Pal recommends on anatomical grounds the section of the rami communicantes. Francke, in a case where root section had been refused obtained complete success by a slow avulsion of the corresponding intercostal nerves After cutting the seventh eighth and ninth intercostal nerves on each side he twisted out the central end until he reached the ganglion and thus destroyed the rami communicantes Dujarrier reports the same result in a case similarly operated on by Maire, of Vichy Guleke and Lamprecht advise extradural root section, while Von Franke-Hochwart contented himself with intercostal nerve section alone, which was quite unsuccessful Bierens de Haan in 1920, reported a case in which transient paralysis with retention of urine and fæces and trophic troubles, followed upon posterior root section for gastric crises

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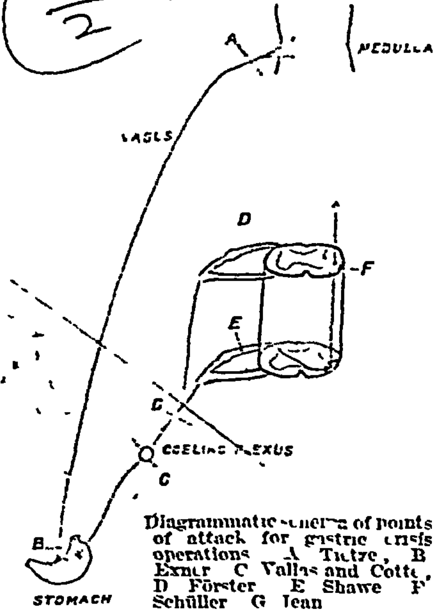
FIG 1



Diagrammatic scheme of points of attack for gastric crisis operations A Tietze, B Exner C Vallas and Cotte, D Förster E Shawe F Schüller G Jean

In spite of the many brilliant results reported from root section, Forster in 1910 turned his attention elsewhere and persuaded Tietze to cut the sensory roots of the vagus at their medullary origin, but the result was fatal In 1911, Exner divided both vagi in two patients following it with a gastro-enterostomy to overcome the paralysis of the stomach but the operation was ineffective Cotte resected the gastric branches of the vagi in three cases all of which w [illegible] failures (Fig 1.) Thomsen in 1924 repeated [illegible] operation, with a success of one year's duration [illegible] 1921 on theoretical grounds advocated eith [illegible] of the thoracic ganglia or cutting the gr [illegible] nerve He performed the operation [illegible] consequently extrapleural route on dogs and [illegible] ormal position of never put it into actual pra [illegible] cess been fractured Wolfsohn report five cases of [illegible] ld be effected but with in only one of which was th [illegible]

The objective and su [illegible] then, the cases collected persisting after poster [illegible] and in 1918 by Prof Schenk a good deal of spec [illegible] that patients with anterior been made to explain them The frequent reappearance of the pain, even after the most extensive root section, has led Critchley to ask whether the intensity of the pain stimulus produces an overflow into other conduction paths Leonard Kidd, in 1911, concluded that afferent fibres exist in the spinal ventral roots of man Lehmann, in 1920, from the results of posterior root section in dogs came to the conclusion that pain sensations probably travelled via the anterior roots Shawe, in 1924, basing his conclusions upon a large amount of original work conducted along clinical and experimental lines, thinks the operative treatment of gastric crises should comprise section of both anterior and posterior nerve roots

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* The first and second Lettsomian Lectures appeared in THE LANCET of Feb 26th and March 12th respectively

This has been put to the test at the National Hospital by my colleague Sargent in two cases In one he cut the fifth to the eighth posterior roots on both sides, and the fifth and seventh anterior roots on the left side, and the fifth, sixth, and seventh anterior roots on the right side In the other case he cut the seventh, eighth, ninth, tenth, and eleventh anterior and posterior roots on the right side only In the first case the attacks of pain and vomiting returned within a few weeks of the operation and persisted unchanged for a year There was no alteration in the nature or severity of the crises Then they ceased for a year and a half, after which intense pain reappeared but with no associated vomiting In the second case pain and vomiting persisted, although the character of the pain was somewhat modified after the operation

So popular had posterior rhizotomy become that Hey Groves, in 1911, summed up the current opinion of the procedure as follows: "For the relief of visceral crises the operation holds out the only prospect of radical cure which we know at present"

That "present" was to be of short duration In 1917 Frazier stated that of all cases reported as operated on by posterior root section, only 19 per cent could be claimed as cures, while the operation mortality stood at 15 7 per cent Leriche, in 1922, went still further and stated that he had never seen tabetic crises disappear even after the most extensive posterior root section, a section in some cases extending to seven or eight roots on each side

Apart from the possible failure of posterior rhizotomy for the cure of pain and its probable uselessness in gastric crises, there are two serious disadvantages, one surgical and the other functional, attached to the operation Owing to the wide overlapping of sensory nerves and the usually wide area of pain, the division of several consecutive roots probably on both sides is required This necessitates an extensive laminectomy, often upon a bad operative risk. While loss of pain and temperature sense is no inconvenience, yet the loss of sensations of touch, motion, and position is a very definite handicap To overcome this it has been suggested that every third root be left But such a manœuvre will result in the pain not being completely abolished

Partial Division of the Spinal Cord

It was owing to the equivocal reports upon the results of the operation of posterior root section, results which showed a rapidly increasing percentage of failures, that led Schüller, in 1910, to suggest that a partial division of the spinal cord might be employed instead of root section in gastric crises and spasticity He thought that the posterior columns might be cut for spasticity, either alone or with the direct cerebellar [illegible]ct, and that the anterolateral tract might be cut [illegible]astric crises

[illegible] 1910 Cushing had suggested "the deliberate [illegible]n, either of the entire cord or of the posterior [illegible]e, cephalad to the lesion" for intractable [illegible]g pain from malignant spinal meta- [illegible]rmed such an operation in 1916, [illegible] the thoracic region with an [illegible] result Previous to Cushing's [illegible]d the same procedure in [illegible] [illegible]ceived a shrapnel wound [illegible]tomy at the level of the twelfth dorsal and first and second lumbar vertebræ had been performed, shrapnel removed, and the cauda equina sutured. He was admitted to the National Hospital under the care of Risien Russell, with a complete flaccid paralysis of the lower limbs, with marked muscular wasting, and retention of urine and fæces. He suffered from intense pain in the lower limbs, especially in the upper part of the thighs, and in the lower part of the abdomen

At operation the cauda equina and lower end of the spinal cord were found enveloped in a mass of scar tissue I did a transection of the whole cord immediately above the lesion, and cutting through the roots below removed the lower end of the cord. There was complete loss of pain, he was able to do without morphia, and left the hospital much improved

Section of the Anterolateral Column

In 1911 Spiller as a result of his observations on a case to be referred to later, was led to propose section of the anterolateral column for intractable pain in a case of malignant growth in the spinal cord The operation was performed by Martin on Jan 19th, 1911, both anterolateral tracts being divided to a depth of about 2 mm at a point opposite the seventh dorsal vertebra Pain was much diminished and a year later Spiller regarded the result as successful

At Spiller's suggestion, Cadwalader and Sweet undertook some experiments on dogs to show the effects of cutting the anterolateral tract In their cases, motor paralysis was noted immediately following the operation, but it disappeared very rapidly and was replaced by marked ataxia As microscopically no injury was found in the pyramidal tract and von Monakow's bundle, they assumed the transient paralysis to be due to a temporary vascular disturbance

The second occasion on which section of the anterolateral tract was performed was in 1912 by Beer for the relief of pain due to metastases from uterine carcinoma The operation was done at the level of the tenth dorsal vertebra and gave complete analgesia and loss [illegible] cold perception on the rig[illegible] side up to the le[illegible] pubes The pain in the back, however, wa[illegible] Later, the operatio was performed by [illegible] the suggestion of Forste and in 1920 Frazier reported six cases upon which h had operated, all for pain due [illegible] malignant disease [illegible] following gunshot wounds

Souttar was the first to do an anterolateral section for gastric crises in tabes He operated on a patient of Sydney Owen's at the West London Hospit in 1915 It was a unilateral section on the rig side between the first and second dorsal segment The result was immediate relief of symptoms, whic relief had persisted for ten years Since the operations, either unilateral or bilateral, have bee reported by Leighton, Sachs, Grant, Nonne, an Tietze for the gastric crises of tabes, and by Pee Sicard and Robinson, and Frazier for intractab pain due in most cases to inoperable malign disease The results, especially in the latter type case, have been on the whole very successful

On what anatomical grounds is the operation anterolateral tract section based ?

ANATOMY.

The ascending or centripetal tracts have their ce of origin in the posterior root or spinal ganglia The cells are connected peripherally by means of fibr running in the nerve trunks with the various peripher organs found in the skin, mucous membran mesentery, articular surfaces, muscles, and elsewher Centrally the fibres from the cells of the posteri root ganglia pass by way of the posterior roots in the spinal cord In the cord their further course ma be a short, medium, or long one The short fibr pass directly through the marginal zone of the posteri horn into the grey matter, when they end arborising among the cells of the posterior and anteri horns of the same side of the cord The mediu fibres pass through the segment of entry into t posterior columns and from thence into the dors horn of the same side, ending in Clarke's colum The long fibres pass through the segment of ent into the posterior columns and passing upwar terminate in the nuclei of the dorsal columns in the medulla

The endogenous tracts of the spinal cord include the centripetal fibres of the second order and the so-called intersegmental tracts The latter serve to connect the grey matter of successive segments of the cord Under the former are included those fibres which provide for the further conduction towards the sensorium of impulses received through the elements of the posterior roots which have already terminated in the cord They include the dorsal spinocerebellar or direct cerebellar tract, the ventral spinocerebellar, anterolateral ascending or Gowers' tract, and the spinothalamic tract These, together with the crossed pyramidal tract and lateral ground bundle constitute the lateral column of the cord Their relative position is as follows. (Fig 2) in the hinder part of the lateral column, occupying a somewhat triangular area, is the crossed pyramidal tract External to this and occupying a narrow area at the periphery of the cord which extends backwards to the postero-lateral fissure is the direct cerebellar tract Gowers' tract, an extensive crescent-shaped strand occupies the anterior three-quarters of the periphery of the lateral column Behind, where it is thickest, it lies in the angle formed by the direct cerebellar and crossed pyramidal tracts becoming thinner as it passes forwards The spinothalamic tract is situated opposite the base of the posterior horn and lies in close apposition to the inner side of Gowers' tract (Fig 3) It is a crossed sensory tract, whose fibres are the axons which arise from certain cells in the posterior horn, and crossing to the opposite side of the cord through the anterior commissure ascend in the anterolateral column, finally reaching the optic thalamus They are not gathered into a compact bundle but are more or less loosely scattered in the lateral column The rest of the lateral column of the spinal cord is occupied by the lateral basis or ground bundle It surrounds the anterior horn and separates the aforementioned tracts from the grey matter of the cord It consists of (1) longitudinal commissural fibres, which unite the groups of cells in the grey matter with one another, (2) fibres which pass across the anterior commissure from the grey matter of the opposite side, and (3) horizontal fibres belonging to the anterior roots of the nerves which pass through it before leaving the cord

FIG 2

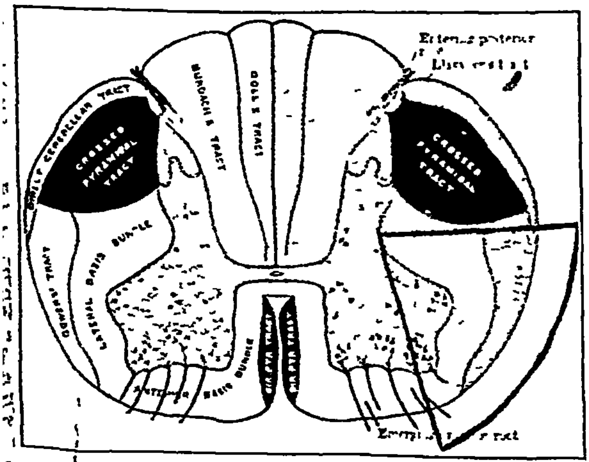


Diagram showing relative positions of tracts in the spinal cord and area involved in anterolateral section (Cunningham's anatomy)

THE SENSORY APPARATUS OF THE SPINAL CORD

In order to reach the sensorium, sensory impulses, originating in the trunk or limbs, make their way into the spinal cord through the spinal ganglia and the posterior nerve roots These impulses have to do with tactile sensibility, sensibility to pain, temperature sense, and deep sensibility The fibres which serve for the conduction of sensory impressions of the above four categories separate from each other immediately after entering the cord Or, in other words, each one of the specific impulses, such as pain, touch, heat, and cold, has its own tract in the spinal cord devoted to its conduction Brown-Séquard, about 75 years ago, stated that division of one half of the spinal cord caused loss of sensibility to pain on the side opposed to the lesion, and that motion was affected on the same side Though his statement has been attacked from time to time, both by clinicians and experimental physiologists, nevertheless the close relation between the impulses for sensations of pain and temperature has long been universally recognised. So that whatever may happen to the impulses which underlie other forms of sensibility, there can be little doubt that in man those for pain, heat, and cold cross to pass up the opposite side of the spinal cord But, as Head and Thompson point out, although the impulses for pain, heat, and cold are so closely associated in their passage up the spinal cord on the side opposed to their point of entry, they do not travel inextricably intermingled Moreover, and this is of outstanding importance in connexion with our subject, they found that when sensibility to pain is abolished from an intramedullary lesion no normally painful stimulus will produce a painful afferent impulse The question of the conduction of tactile stimuli would appear to be still sub judice. Mann supposes that tactile impulses pass up any open centripetal path, and that so long as fibres are present for the transmission of centripetal stimuli, these can be followed by the tactile sensations, even although the posterior columns mainly subserve this function Pétren, Borchert, Rothmann, Bing, and others also assume a crossed and an uncrossed tract for the transmission of tactile sensations

FIG 3

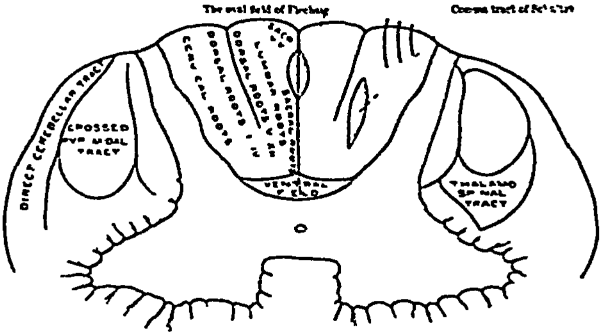


Diagram showing position of spinothalamic tract (Cunningham's anatomy)

Head and Thompson sum up their conclusions as follows.—

> "Tactile, painful, and thermal impulses, and those associated with tactile localisation, cross in their passage through the spinal cord, and show evidence of recombination. But the sensory impulses which underlie the recognition of passive position and movement and tactile discrimination do not cross within the limits of the spinal cord."

They think, however, that for tactile impulses the
crossing is less rapid than for the others And u[illegible]
this crossing is finally completed, that two path[illegible]
be open for tactile impulses one in the primary[illegible]
of the posterior columns, the other in th[illegible]
intramedullary system, in which [illegible] by both
recombined into a specific [illegible] extent Spi[illegible] consequently
forms of tactile sensibil[illegible]eral section o[illegible]ormal position of

Conduction [illegible]ility is lost [illegible]ocess been fractured

At present. howe[illegible]rolateral ch[illegible]ild be effected but with
conduction of painfu[illegible]times [illegible]then the cases collected
Are fibres for pain co[illegible] of [illegible]and in 1918 by Prof Schenk
spinal cord, and if so [illegible] that patients with anterior

by ablation of this system? And can pain sensations be conveyed by other systems when the fibres usually employed for this purpose are destroyed?

Head and Holmes put the matter clearly as follows:—

"Within the spinal cord all impulses capable of generating pain become grouped together in the same path and can be disturbed simultaneously by an appropriate lesion of the spinal cord In the same way sensibility to heat or cold may be lost independently of one another, showing that all the impulses on which they are based have been sorted out into two functional groups, each of which passes by a separate system in the spinal cord It should be possible, therefore, to divide the tracts for the conduction of pain with little damage to the rest of the cord, except that the fibres for temperature would probably be implicated It is questionable whether objective disturbance of sensation would be produced by such an operation, and if so, whether it would be persistent"

FIG 4

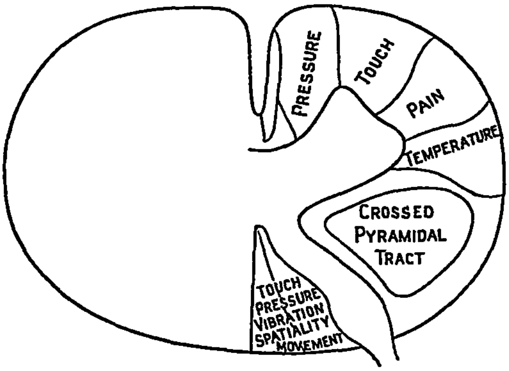


Diagram showing Förster's provisional arrangement of sensory tracts in the spinal cord

How rapidly does the crossing of the fibres conveying painful impulses take place in the spinal cord? Head and Thompson think that the impulses produced by painful pressure from the same part of the body do not enter the cord by the same posterior roots as those carrying the impulses produced by cutaneous painful stimuli Therefore that more than one segment of the cord is required before all the painful impulses from any one part of the body can be gathered together and recombined Piltz thinks that impulses associated with pain, heat, and cold seem to pass completely to he opposite side in the space of five or six segments pinions, however, differ as to how many segments are involved in the crossing, though most observers consider that two, three, or even five segments are necessary

Forster in his work published this year says as a result of his investigations, that "the crossing does not take place in the horizontal plane, but in a steeply ascending direction The fibres coming from one segment of the posterior horn cross in the territory of the segment immediately above, and the crossing is completed by the upper end of this latter segment" For instance, he found that after section of the anterolateral tract at the upper end of the third dorsal segment, there resulted a total analgesia and therm-anæsthesia in the fourth dorsal dermatome, and that after section at the upper end of the sixth cervical segment anæsthesia and analgesia were complete in segments up to the seventh cervical And that bilateral section of the anterolateral tract at per end of the fifth thoracic segment all the mes from the sixth dorsal to the third sacral c and therm-anæsthetic In these three n, crossing was complete within the e, ceph

g pain fro eral rule, there is no med such sensation except the teral columns In result res conveying pain d th up the cord in the 1893 van Gehuchten 904 Spiller was able to give clinical proof of the correctness of these opinions in a patient with complete loss of sensation for pain and temperature in the lower limbs, with preservation of tactile sensibility At his death in 1905, necropsy revealed a solitary tubercle involving the right Gowers' tract at the lower end of the thoracic cord, and slightly above this another solitary tubercle implicating the left tract of Gowers Forster records a personal experience in which, while giving an injection of novocaine for intercostal neuralgia, the needle passed through an intervertebral foramen and the dura and impinged upon the cord The patient at once complained of terrible pain in the leg of the opposite side He says that he has frequently observed that pricks, cuts, or light touches on the anterolateral tract of the exposed cord causes severe pain in the opposite leg, while similar manipulations of the posterior columns were completely free from any reaction Spiller, Taylor, Greenfield, and Martin have described cases of syringomyelia in which the severe pain can only have been due to an irritation of the lateral tract

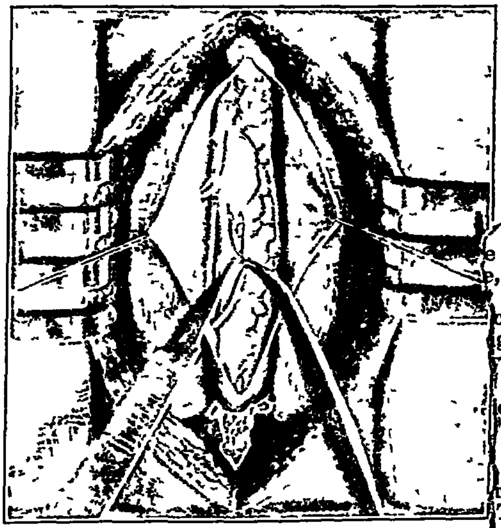
Localisation in the Anterolateral Column

Knowing that afferent impulses pass up in the anterolateral column, and further, that each specific impulse has a specific tract devoted to its conduction, is there any evidence as to the position which each occupies, both in the column itself and in relation to each other On these points Forster says —

"If we must assume a separate region for the paths of pain in the anterolateral column, we, however, do not know exactly, so far, which special area contains the pain and which the temperature sensation I provisionally place the temperature paths in the dorsal part of the anterolateral tract, and the pain paths immediately in front of them" (Fig 4)

Are there other paths, in addition to the long centripetal paths in the posterior and anterolateral columns, by which afferent impulses can p Karplus and Kreidl, as a result of their resear along the lines formerly taken by Schiff, think there is another possible path for the conductio pain—viz, the grey matter On this point Fo says —

FIG 5

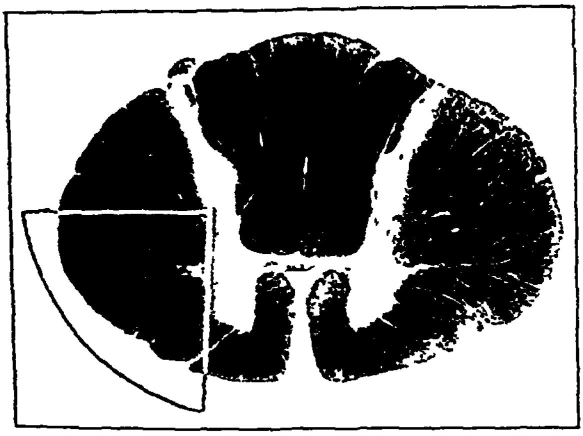


Anterolateral tract section Cord rotated by forceps gras cut end of dentate ligament (Peet)

"The posterior horn columns on both sides obviously numerous short chains of neurons, which, put together, a continuous path, which can carry up pain impulses to the brain on their own side without taking any part i long ascending tracts, and thus stimuli, which affect side, can be transmitted by the opposite side of the post horn columns" He goes on to say that, "these funicular for pain through the grey matter are natu only by-passes"

This would explain those cases in which pain perception has remained after bilateral section of the anterolateral tracts Frazier thought that in his cases this was due to some of the pain-fibres in the anterolateral tract escaping the knife Forster on the contrary, thinks that we must assume that the integrity of pain sensation, in spite of cutting of the anterolateral tract in certain individuals, is due to the existence of a by-pass He is in doubt as to whether this is to be looked for in the posterior columns or whether we are to assume a posterior horn path But on the whole, as a result of the experiments of Schiff, Rothmann, Karplus, Kreidl, and others, he thinks that only the path in the posterior horns can be assumed

FIG 6.



Transverse section of the spinal cord at level of the second dorsal segment showing area involved in anterolateral section

SECTION OF THE ANTEROLATERAL TRACT

The operation of anterolateral tract section should offer no special difficulties to the surgeon trained in neurological surgery. Exposure of the cord of sufficient extent can be obtained by the removal of two, or at the most three, laminal arches The dura s opened in the entire length of the wound The arachnoid is also freely and carefully opened, so as o expose the exact attachment of the ligamentum enticulatum and the emerging anterior root One the denticulations of the ligament is cut at its achment to the inner surface of the dura, and its t end seized with fine forceps By steady and gentle iction on it the cord is carefully rotated to expose anterolateral surface (Fig 5)

The success or failure of the operation depends tirely upon the accuracy with which it is performed requires of the operator an accurate knowledge of microscopical anatomy of the spinal cord and an ility to visualise such anatomy on the surface osed to view. The chief danger is damage to the ssed pyramidal tract (Fig 2) The section concerns y that part of the lateral column which lies anterior point midway between the posterior and anterior ts, and commences just anterior to the reflection the dentate ligament from the cord The knife uld be carried forward parallel to the antero-terior axis of the cord and made to emerge through t the median side of the anterior root (Fig 6) depth of the incision should be not less than mm nor more than 3 mm It may be made with ery fine-pointed sharp knife, marked so that a th of 3 mm can be accurately determined ittle or no bleeding results from the incision upulations should be of the gentlest kind and no sure exerted on the cord during them The use suction apparatus does away with the necessity ponging and facilitates the performance of the t delicate stage of the operation Should a eral section be indicated, exactly the same procedure is carried out on the opposite side of the cord The dura is closed by a continuous suture of fine catgut and the muscle layers by interrupted sutures in the usual way The postoperative treatment is the same as after laminectomy for any other condition, but the nursing is facilitated by the more restricted area of bone removal allowing of freer movement of the patient The bladder and rectum are almost invariably unaffected and trophic disturbances should not occur

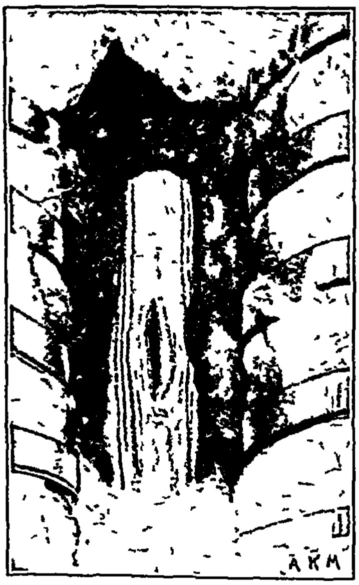
The level selected to do a section of the anterolateral tract will depend first upon the segmental areas involved in the pain-producing lesion, and, secondly, upon the number of segments necessary for the complete crossing of all the fibres from those areas Peet says it is essential that the division should be at least four segments above the area to be rendered analgesic But in cases of upper abdominal pain he also cuts the posterior nerve roots in the exposed field, adding, he thinks, another segment to the analgesic area But surely this is "making sure doubly sure ' with a vengeance Frazier takes a level at least four segments above the area of the lesion and adds two or three segments to that, to allow for a possible extension upwards of the pain-producing lesion

If we are to accept Forster's conclusions published a few weeks ago and already referred to—viz , "that all the fibres coming from one segment of the posterior horn cross in the territory of the segment immediately above and the crossing is completed by the upper end of this latter segment," it will not be necessary to go so far afield in segmental levels as has been done in the past

A NEW OPERATION

Dr. Godwin Greenfield of the National Hospital, has suggested a new method of performing chordotomy. The operation consists of a mediolongitudinal section of the cord at the selected level and is applicable to the same class of case as the anterolateral tract section (Fig 7) It has the advantage over the latter that a bilateral effect is obtained by one incision, which completely destroys *all* the pain-conducting fibres crossing at the level of incision In pain arising from internal organs, whether due to malignant disease or in gastric crises no relief is ever obtained from unilateral chordotomy a bilateral section being always necessary

FIG 7.

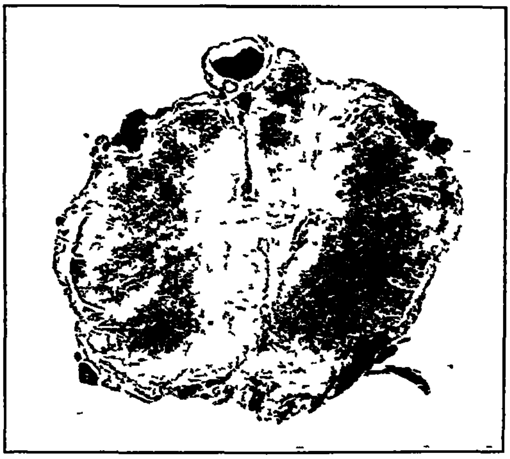


Operation of mediolongitudinal section.

One-sided section only produces contralateral a
thesia of the skin and the deep structure
not of the abdominothoracic cavity P
from the last pass probably by both
lateral tracts to the same extent Spie consequently
shown that, with bilateral section of ormal position of
tract, visceral sensibility is lost ocess been fractured
been shown, in anterolateral ch ld be effected but with
pain-fibres do sometimes then, the cases collected
in incomplete relief of and in 1918 by Prof Schenk
longitudinal section h that patients with anterior

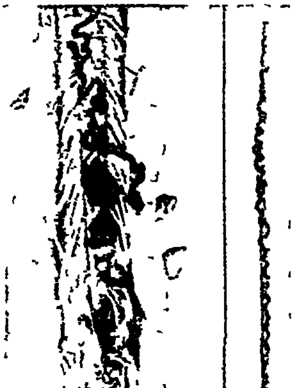
there is no risk of injury to the crossed pyramidal tracts with resulting motor weakness or paralysis, and the long centripetal tracts are untouched This operation has its special application in painful lesions of the lower limbs and pelvic organs A mediolongitudinal incision, of about one inch in length, at the level of the eleventh and twelfth dorsal and first lumbar segments, would destroy all pain-fibres coming from the lower limbs and pelvis Higher up in the cord the length of the incision would obviously have to correspond to the segmental distribution of the pain Two points in technique are of importance The incision must be made exactly in the midline of the cord, and the anterior spinal artery, which lies at the surface of the anterior median fissure, must be avoided The exposure of the spinal cord is carried out in the same way as in laminectomy for other conditions, and its length will be governed by the length of the incision to be made in the cord

FIG 8



Transverse section of the spinal cord showing result of mediolongitudinal section

FIG 9



giectasis of posterior spinal with (inset) enlarged and vessel on nerve root

I performed this operation before the inaugural meeting of the Association of British Neurological Surgeons in December, 1926, on a patient suffering from gastric crises in a very severe form The operation presented no inherent difficulties, and the danger of damaging the anterior spinal artery was obviated by the use of a knife in the last stage of the section, by he pia-arachnoid together with the forward and out of danger (Fig 8) tient, who was a poor operative ng, died of pneumonia a few Perhaps, too, the occasion performance of such an on But of its feasibility and its usefulness in properly selected cases I think there can be no question It is a testimony, too, to the broad vision of the distinguished neuropathologist who first conceived it

TELANGIECTASIS OF THE SPINAL CORD AND MEMBRANES

The condition to which I desire to call attention in the latter part of this lecture has been described under various names by different authors, though none of them venture upon an explanation of its pathogeny Telangiectasis, angioma, hæmangioma, cavernous angioma, tumor cavernosus, angioma racemosum (arteriale or venosum), varicocele of the spinal cord, are the various designations under which it has appeared

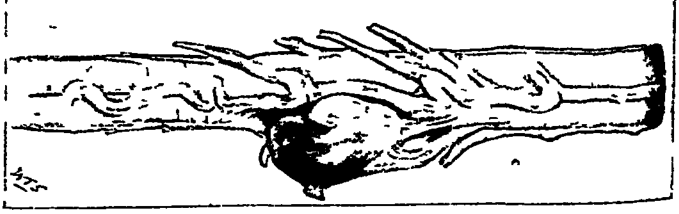
Sir Bernard Spilsbury exhibited a specimen of one of these conditions before this Society in January, 1921 I say " one of these conditions " advisedly, because they do not all show the same characteristics The vessels of the pia seem to be involved in all cases, either alone or in association with an extradural or intra medullary extension In Jumentié and Levy-Valensi's case (Fig 9) the veins of the spinal canal were also involved, the enlarged veins running out through the intervertebral foramina, whilst in Sargent's case of " arterial angioma," the vertebral and spinal muscles were " permeated by numerous dilated, tortuous, thin-walled arteries," which extended into the spinal canal, while at the level of the seventh cervical segment there was a pial aneurysm containing recent blood-clot (Fig 10) In neither of these cases were the intramedullary vessels affected In Raymond and Cestan's case (Figs 11 and 12) the intramedullary vessels, especially of the lower cervical region, were dilated to the same extent as the extramedullary, and showed sac-like dilatations, but the condition did not extend extradurally Whilst in the case reported by Berenbruch, a large cavernous plexus of veins along the spinal column was connected by way of the intervertebral foramina with an angioma of the dura, and an angioma occupied the cord substance from the fifth cervical to the third dorsal segment.

Pathology of the Conditions

Is the underlying pathology of these cases the same, and are they simply different stages in the development of the same primary condition ? Or have we to do with several different conditions ?

Virchow was the first to clearly differentiate between telangiectasis and true angioma He called attention to a point which Adami emphasised—namely, that telangiectasis is a congenital dilatation of capillaries without any new-formed blood-vessels, while an angioma is a new growth, and is only properly so-called where there is a formation of new blood-vessels In the majority of the reported cases no mention is made as to whether arteries or veins, or both, were involved in the process, but it would appear that of those in which it was limited to the pia the veins alone were concerned

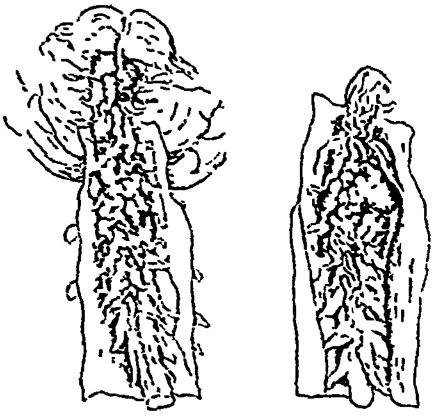
FIG 10



Sargent's case of pial aneurysm

Three theories have been advanced to explain the condition (1) that it is a congenital po anomaly, (2) that it is of neoplastic origin; (3) th these are that it is due to a peripheral constriction with consequent secondary varicosity Against the theo congenital origin t may be remarked that all reported cases except that f Cobb—in which the patient was 8 years old—ave been in adults Virchow maintained that the ondition never occurs in children and was always

FIG 11



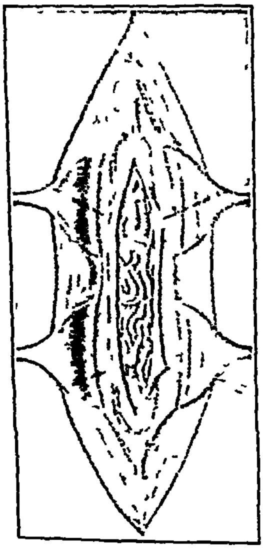
Anterior and posterior surfaces of spinal cord showing dilated vessels

cquired, but that a pre-existing dysplasia may be the rimary cause of the neoplasm

It is difficult to understand how a peripheral onstriction could operate, seeing that the main urrent of venous blood in the spinal cord would ppear to be horizontal in direction, by way of the veins running out along the nerve roots; thus each segment is, as it were, drained by a ring-like arrangement formed by the transverse branches between he longitudinal veins and the offsets proceeding from the latter to the intervertebral foramina

In most of the cases the vessels on the posterior aspect of the cord would seem alone to have been affected, and the most frequently occurring levels are the cervical and lumbosacral regions This may be explained possibly by the fact that the spinal veins are larger on the posterior surface and at the lower end of the spinal cord than elsewhere, and further, that the posterior mediolongitudinal vein is largest and most constant in the cervical and lumbosacral regions of the cord

FIG 13

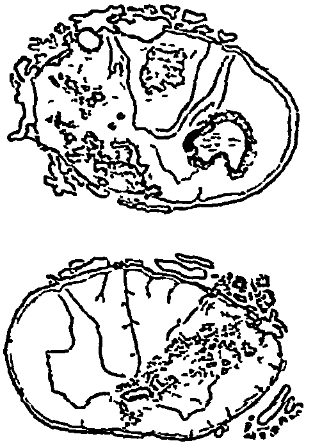


Showing condition usually found on operation for telangiectasis of the spinal cord (Cobb)

In some cases trauma or increased exertion have been adduced as a causative factor Whether the actual cause, or merely causing increased and rapid growth in a pre-existing condition, it is difficult to say Pilzer thinks the process begins primarily as a hæmorrhage, followed by the formation of new vessels with their subsequent dilatation Rolleston has raised the question as to whether the dilated vessels were primary rather than secondary, and due to some morbid change in the inal cord

Some of the cases have been associated with n of the skin Therefore every case of cutaneous us, especially with a segmental distribution, ld be carefully investigated with a view to ng any possible involvement of the cerebrospinal nervous system Such a course might very well show that this condition in the spinal cord is not so rare as is generally supposed A similar cerebral syndrome is already widely recognised

FIG 12.



Showing involvement of the intramedullary vessels in telangiectasis of the spinal cord

Diagnosis and Treatment

In diagnosis the clinical history, as Sargent points out, may be of the greatest value One of the most striking features is the variation in symptoms from time to time The onset is usually sudden, with rapid development, and the symptomatology is that of hæmorrhage into the spinal cord or canal. Then in many cases, recovery, complete or partial, follows, with an interval of days, months, or even years before the next attack Is it not possible that cases may occur with the cause of an attack undiagnosed, followed by recovery, and no further attacks? Sargent's cases are the only ones in which any record of an examination of the cerebro-spinal fluid occurs, and this was done in three cases Two showed xanthochromia and all three an increased protein content The condition is usually revealed as a result of an exploratory laminectomy

If confined to the pial vessels the question may arise of the value of ligation One is then between the Scylla of doing too little and the Charybdis of doing too much As a rule, however, the vessels are enormously distended, with extremely thin and friable walls, closely packed together in an inseparable mass (Fig 13) They form indeed, a veritable noli me tangere, and are better left alone By leaving the dura unsutured one may hope for relief through the decompressive nature of the operation But if the symptoms are due in chief part to circulatory changes in the cord, even this hope will prove elusive.

In concluding this my third and last Lettsomian lecture, I desire to acknowledge the great debt I owe in their preparation to Dr Godwin Greenfield, Pathologist to the National Hospital, to Dr. Arnold Carmichael sometime Medical Registrar there, and to Dr Macdonald Critchley, the present holder of that office

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ANTERIOR SUBLUXATION OF THE ATLAS

CAN THE CONDITION BE TREATED BY OPERATION?

By Prof W A OPPEL, Hon F R C S Eng,
LENINGRAD

The sight of a patient with an anterior subluxation of the atlas arouses a feeling of apprehension The head is slightly shifted forwards, the patient carries his head as carefully as though it were made of glass and might at any moment be smashed This helplessness of the head, causing it to be held by the hands of the patient as if to prevent it from falling, at once arouses attention, and has been noted in the recorded cases

General Observations.

We know what is frequently the sequel of an anterior dislocation or subluxation of the atlas; even in the case of subluxation when the anterior arch of the atlas is moved forward the ligamentum cruciatum becomes strained In the case of fracture of the dens (odontoid process) the latter with the anterior arch is also displaced in a forward direction, if the dens remains intact it exerts a pressure on the ligamentum cruciatum displaced forwards And yet behind this ligament, as everybody knows, lies the medulla oblongata.

In case of anterior subluxation of the atlas with the ligamentum cruciatum remaining intact the space allotted to the medulla may be slightly restricted And such a diminution the medulla is capable of enduring But if the atlas be moved ever so slightly forwards and the ligament, unable to bear the strain, is ruptured, the medulla will be instantly compressed And what surgeon does not know that the history of anterior dislocations and subluxations of the atlas is one of sudden death caused by trauma? The number of patients who have not succumbed to such a lesion may be counted on the fingers

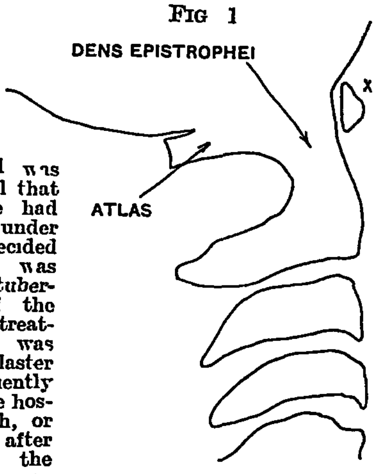
Hence the sight of a patient subject to an anterior subluxation of the atlas causes a most painful ı pression, the head is expected to slip forward at ıy moment and fall over, causing instantaneous death And as a matter of fact such patients live on the brink of death and unfortunately are sometimes reduced to a most helpless condition

Narrative of a Case

On August 5th, 1926, a workman, 30 years old, was admitted as patient into the surgical department of the Mechnikov Hospital, Leningrad The patient was a carrier of heavy weights

On Jan 29th, 1925, the patient was carrying a weight of 200 lb up a staircase to the fifth floor The weight was carried on his back, and the top of the basket, in which it was stowed, projected above his head While carrying the weight the patient observed that something had crunched in the inside of his neck without causing pain Nevertheless, he executed his job and worked on for a couple of hours longer At the expiration of that time, however, he experienced violent pains in the neck, and being unable to move his head was taken into a hospital that evening After he had been placed there under observation it was decided that the patient was *suffering from a tuberculous* affection of the cervical vertebræ A treatment of extension was carried out, and a plaster bandage was subsequently applied He left the hospital on April 24th, or nearly three months after his admission, in the plaster bandage He was treated as an out-patient at the hospital till May 1st, when he resumed his customary work

FIG 1



The radiogram corresponding to this diagram has been abandoned × = The fragment of the arcus anterior atlantis.

At that time the movements of the head became freer and the pains considerably subsided He continued working as a carrier, although he was given lighter weights to carry Occasionally he varied his occupation by working as a clerk During this interval sometimes the movements of the head became all of a sudden difficult and painful, such relapses generally lasted for a day or two, and then the mobility of the head was restored All through this period, however, he had to be careful in moving his head In February of 1926 his head was worse and he was treated at a dispensary as out-patient, when a strain of the cervical muscles was diagnosed After a week's treatment he resumed his customary work

On July 27th, 1926, as he was raising a carcass from the floor, he experienced violent pains in his neck in which

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something seemed to have turned On the morning of the following day (28th) he was unable to move his head At the dispensary the same conclusion—i e, strain of the cervical muscles—was reached, and on August 4th he was told that as he had nothing the matter with him he could resume his ordinary work The patient, however, being dissatisfied with such a decision, was examined by a commission, who gave orders to have him admitted to the Mechnikov Hospital

FIG 2 A

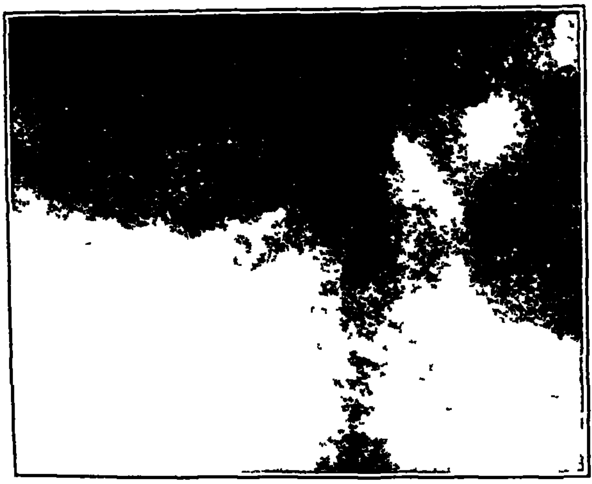
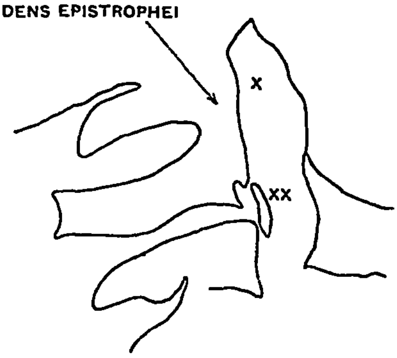


FIG 2 B



× = Place of the resection The fragment of the arcus anterior is absent ×× = The fragment of the corpus epistrophei

Condition on Admission —The patient is above the middle height, strongly built Holds the head slightly inclined to the right, turns the head with difficulty by a series of jerks The head cannot be inclined forwards, backwards, or to the sides, rotation extremely painful Pains in the region of the right scapula The movements of the upper and lower limbs are free

On examination in profile, the head seems to be slightly displaced forwards, in walking remains quite fixed The patient appears to be taking extreme care of his head for fear of its falling forward. On examination of the pharynx with the fingers the projecting arch of the atlas can be easily perceived It is painful to palpation A Rontgen plate taken of the profile showed (Fig 1) (*a*) the space between the spinous process of the epistropheus (axis) and the posterior arch of the atlas which seems to be increased, (*b*) the anterior arch of the atlas displaced forwards The plate clearly shows that the anterior arch of the atlas is broken off The dens of the epistropheus is so imperfectly seen that it is impossible to decide whether it is fractured or not As the head was fixed, the radiographer was unable to take a picture through the mouth.

The patient sleeps poorly, he is troubled with pains in the neck and cannot lay down his head in a comfortable position Extension and plaster bandages were applied without effecting any improvement.

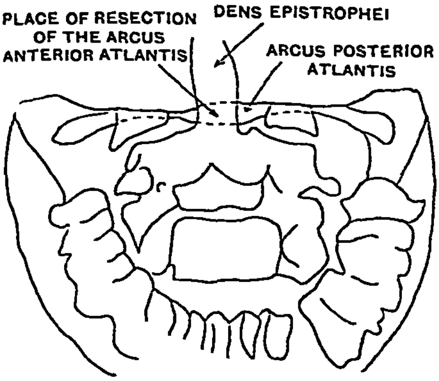
FIG 3 A

Commentary

We were thus confronted with a patient who, a year previously, had experienced a fracture in the cervical region of the vertebral column, presumably in that very part of the region that had been determined by us He had long been under treatment, not been completely cured, experienced an acute relapse of his original injury, and then entered the surgical department of the Mechnikov Hospital It is to be noted that patients suffering from subluxation of the atlas survive this injury and sometimes seem all but restored to health, when some awkward movement of the head occasions sudden death, due to a further slipping forward of the atlas Such is the evidence of literature The patient in question had also obtained relief under a long period of treatment, resumed his work, during which he had a relapse, which luckily for him had not ended in death

The complex of symptoms, including the evidence of the rontgenograms, was in this case perfectly clear The patient was suffering from an anterior subluxation of the atlas with a fracture of the anterior arch The rontgenograms, however, could give no exact information as to one point, whether the dens of the epistropheus was fractured or not Anterior dislocations and subluxations of the atlas are more frequently than not accompanied with separation of the process from the body of the epistropheus And in this case I was led into error But looking back to the diagnosis of the patient as determined before the operation and examining now the symptoms, of the patient I find certain features that should have led to the conclusion that the dens had remained intact

FIG 3 B



After operation

the patient could turn his head and consequently execute movements involving the normal position of the dens Had the dentoid process been fractured the movements of the head could be effected but with very great difficulty. And then, the cases collected in 1913 by Prof Pokotilo and in 1918 by Prof Schenk testify to the fact that patients with anterior subluxation of the atlas are not infrequently so helpless in regard to their head that they are obliged to hold it in their hands Possibly this may be one of the symptoms of the fracture of the dens, inasmuch as the head is poised on that process as on a vertically set axis

However that may be in the case under discussion I assumed the occurrence of both fracture of the anterior arch accompanied by an anterior subluxation of the atlas and fracture of the dens As the condition of the patient failed to improve in spite of an application of a plaster bandage or treatment by extension, and he was suffering for a whole year, while his case latterly became worse, and as I knew no way of helping him by conservative methods, I thought I would endeavour to relieve him by means of an operation

Plan of the Operation

The atlas is displaced forwards, the ligamentum cruciatum being strained A further slight anterior slip of the atlas not only could but would lead to a rupture of the ligamentum cruciatum, compression of the medulla, and death of patient Hence the crux of the intended operation would consist in taking measures to avert the possibility of an ensuing compression of the medulla It thus becomes evident that to gain that purpose the anterior arch of the atlas should be removed This measure alone would permit the detached dens to move forward with the subsequent slipping forward of the atlas It seemed to me theoretically desirable to resect the dens simultaneously with the resection of the anterior arch of the atlas In such case the danger involved in the compression of the medulla would be averted The stability of the head after such an operation might be impaired, but if it was a new dens would be substituted by means of another operative intervention. This new process would have to be placed posteriorly and so devised that while losing its rotatory movements the head would obtain stability, for that purpose it would be necessary to imitate the operation of Albee and to set the superior extremity of the osseous graft against the occipital bone, under the spina occipitalis, and to join its lower end with a most convenient space provided by the bifurcation of the spinous processes of the cervical vertebræ, commencing with the second and concluding with, say, the fourth, fifth, or sixth Anyhow, the painfulness of the bony projection of the anterior arch of the atlas protruding into the pharynx clearly testified to the necessity of its removal

In order to accomplish the excision of the anterior arch of the atlas it is, of course, possible to manipulate through the oral cavity But no surgeon desirous of performing an aseptic operation would willingly choose such a method There is another way of reaching the seat of operation Whoever has "aseptically" opened chronic retropharyngeal abscesses in children knows that the easiest and safest way to reach the affected region is to make an incision between the sterno-cleido-mastoideus in front and the trapezius at the back Reflecting forward the sterno-cleido-mastoideus with the entire vasculo-nervous fasciculum, the retropharyngeal space is rapidly reached without encountering any large vessel or important nerve and the abscess evacuated This was the way I intended to follow in performing an anterior laminectomy of the first cervical vertebra

It must not be forgotten that behind the dens lies the cruciate ligament, overstrained in cases of subluxation If this ligament gets ruptured as a result of an awkward movement of the head, which may always occur in spite of the greatest care on the part of the patient, so much the easier can such a contingency arise under anæsthesia, when all the reflexes of the patient are depressed, and when in the process of vomiting, for instance, violent movements of the head may ensue Therefore I was obliged to warn the patient of the danger To avert it as far as possible a plaster bed was prepared embracing one side of the head of the patient, the shoulder girdle, and the shoulder itself with the body as far as the margin of the ribs, the head and neck of the patient throughout the operation would be completely immobilised by means of this bed in which the side of the patient opposite to that operated upon is fixed As I intended to make an incision behind the left sterno-cleido-mastoideus the plaster bed was to embrace the right half of the head, neck and body The bed was prepared by the surgeon of the ward, Dr Matusov

The Operation Performed.

On Oct 25th, 1926, I performed the operation under chloroform and ether

The patient in his plaster bed was laid on the right side The incision was made along the posterior margin of the left sterno-cleido-mastoideus As a long incision for the sake of facilitating manipulations in the depth of the wound had to be applied, I had to sacrifice the accessory nerve of Willis Having dilated the muscles by means of blunt hooks, I succeeded in penetrating easily between them into the retropharyngeal space A long spatular speculum, with which the anterior part of the wound was reflected, was then introduced Palpation of the arch of the atlas as it projected forward was easily obtained I then commenced to manipulate with the chisel in order to chip off the arch Here I met with a serious difficulty Every time I set the edge of the chisel with my left hand against the apex of the arch of the atlas, protected as it was by the anterior ligament (I had no suitable raspatory for a wound of such a depth) and with my right administered blows on the handle of the chisel with a hammer, the edge of the chisel would slant off the slippery surface of the ligament I could obtain no useful advantage from the chisel and even risked perforating the separated mucous membrane of the pharynx

It should be noted that the wound was relatively deep To see anything in the depths of the wound was impossible I had to work in the dark and to trust to the sense of touch To set the edge of the chisel perpendicularly to the surface which was to be chipped off, the handle of the chisel had to be inclined anteriorly and towards the middle line, the chiselling plane lying somewhat to the front of the line of incision of the integuments In turning the handle of the chisel towards the middle line and anteriorly I pressed the instrument against the posterior margin of the sterno-cleido-mastoideus, whose resistance caused the handle of the chisel to turn back again That was one of the reasons why the chisel slipped off the surface operated upon after every blow of the hammer

To recede from this position and succeed in the intended operation I followed the advice of the assisting surgeon, Dr Nazarov, and acted in the following manner —

The index-finger of my left hand was introduced into the retropharyngeal space The dorsal surface of the finger protected and reflected the mucous membrane of the pharynx while the palmar surface pressed the extremity of the edge of the chisel to the surface operated upon With the right hand I kept the handle of the chisel in the requisite direction, while my assistant, Dr Nazarov, administered blows to the top of the handle In this way we very slowly approached the realisation of our object, and at last the anterior arch of the atlas with its anterior ligament was chipped off This part of the operation took about one hour

I could now easily palpate the anterior surface of the dens which was enveloped in adhesions I refused to try to move it, and could not determine whether it was fractured at the base or not

The wound was sutured, a small tampon saturated with iodoform being introduced into the retropharyngeal space To reach the retropharyngeal space is not at all difficult. But to chip off the anterior arch of the atlas was an exceedingly laborious process, which was caused, in my opinion, by the lack of a suitable instrument The retropharyngeal space after the anterior separation of the mucous membrane is a few centimetres long, and if operated upon should really be illuminated It would seem necessary for that purpose to provide the extremity of a specially designed long and curved dilator with an electric lamp protected by thick glass to ensure it from being accidentally broken while the chisel is being used I had to act trusting exclusively to my sense of touch For separating the anterior ligament and periosteum from the arch it would further be desirable to possess a suitable raspatory with a certain definite curve and attached to a long handle These instruments might, of course, be unsuitable, in order to prevent subsequent growth of callus at the site of operation it would possibly be wiser to have recourse to a chisel. But the chisel should in any case be of suitable shape, long and with a sharp and narrow edge, set on a handle somewhat curved back In that case collision with the posterior margin of the sterno-cleido mastoideus would be averted, and the handle would not interfere with the examination of the wound and the visibility of the direction of the edge The entire operation would then proceed under the control of the eye, and from being cumbersome and difficult, would become elegant and easily and rapidly accomplished

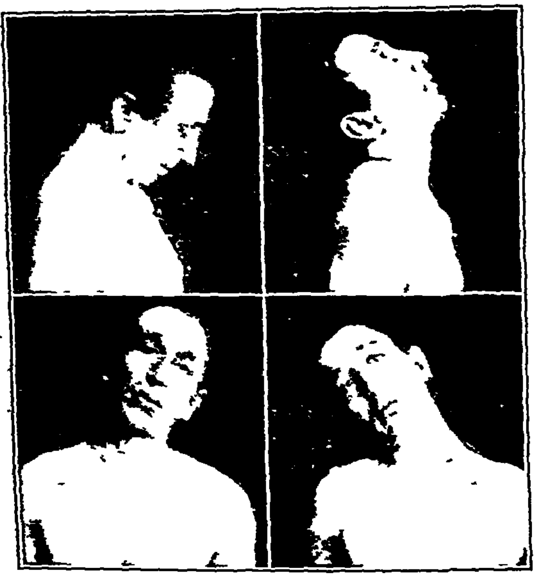
For many reasons over which I have no control I have no hope of being able to devise an armamentarium for the excision of the anterior arch of the atlas

Since, however the operation described will probably be found of use, I have no doubt that some surgeon will devise the requisite armamentarium, and by so doing will afford me great satisfaction.

Results of Operation.

The patient was removed to his ward in his plaster bed in which he remained for ten days However on the sixth day, while still in his plaster bed, he could already move his head slightly During the first three days he experienced pain deep to the pharynx, which interfered with deglutition On the third day after operation the tampon was removed The wound discharged a small quantity of bloody liquid The plaster bed was removed on the tenth day. On Nov 11th it was recorded that the patient moved his head from side to side freely without pain, but the power of inclining the head was limited.

FIG 4



Photographs showing range of movement after operation.

In Fig 2, an X ray taken after the operation, the fractured and projecting part of the anterior arch of the atlas is absent, having been removed by operation. The anterior longitudinal ligament of the vertebral column, interrupted at the seat of operation, can likewise be seen in the same radiogram Another detail, which could not be observed in the plate taken before the operation, can now be seen; a piece of bone has become detached from the lower part of the centrum of the second vertebra and has sunk down Thus besides the subluxation of the altas and the fracture of its anterior arch, a partial fracture of the centrum of the epistropheus had occurred In the plate taken before the operation this detached piece of bone could not be observed, as the whole picture was indistinct Fig 3 is a radiogram taken through the mouth after the operation It exhibits clearly: (1) lack of bone in the anterior arch of the atlas due to the portion resected at the operation; (2) a projection of the dens, much more sharply defined than the normal since the view of it is not obstructed by the anterior arch of the atlas No line of fracture at the base of the dens can be seen, the process being intact It was thus fortunate that during the operation I did not interfere with the process, though I believed then that it might be fractured and might have to be extracted later by means of a dentist's bayonet-curved forceps The integrity of the dens had evidently enabled the patient to execute lateral movements of the head before the operation

Photographs taken six weeks after operation show that all the movements of the head of the patient have been restored (Fig 4); he could move his head painlessly in all directions, whereas before the operation the head could be moved from side to side only with pain and in a jerky manner.

I think that the results of the operation are worthy of attention; and if the question is put, "Can anterior subluxation of the atlas be treated by operation?" I can give it but one answer. such an operation is not only achievable, but desirable and necessary, as it restores to the patient full control of his head, without producing any harmful result. In cases of fracture of the dens, it may or it may not be desirable to have it removed I am unable to come to a definite decision on that point But that subluxation of the atlas with fracture of the anterior arch and integrity of the dens should be submitted to operative treatment seems to be clearly demonstrated by the observations herein contained Thus it appears that in this category of injuries, rare certainly but serious, results can be obtained by operation which are not achievable by more conservative methods I must remind readers that the operation was performed one year after the injury, at the end of which a sharp aggravation in the state of the patient had occurred.

PHLEBITIS AND THROMBOPHLEBITIS

OF THE LOWER EXTREMITIES AND OF THE SUPERFICIAL VEINS OF THE LOWER ABDOMEN *

BY WILLIAM BAIN, M D. DURH., F.R C P. LOND , F.R C S EDIN.

IT is rather remarkable that in most of the text-books on medicine which I have seen phlebitis is either not mentioned or dismissed in a few sentences. Seeing that it is fairly common in gouty patients, and as a complication or sequela of infectious diseases, this is somewhat surprising.

It has been a subject of controversy whether phlebitis occurs with or without the formation of a thrombus, or whether thrombosis always precedes phlebitis. Hunter and his disciples stated that inflammation of the vein preceded the thrombosis, but Virchow in 1856 declared that thrombosis was the primary and essential condition, and that phlebitis was secondary There is probably a certain amount of truth in both these assertions. Phlebitis with thrombus formation is certainly the more common form

Varieties of Phlebitis

The varieties of phlebitis or phlebitis cum thrombus are · (1) Phlebitis migrans[1] Briggs[2] describes cases which he calls recurrent phlebitis of obscure origin His description of these cases bears a strong resemblance to the phlebitis observed in gout. (2) Syphilitic phlebitis which chiefly affects the adventitia of the vein (3) Phlebitis occurring in connexion with a septic wound Two and three will be excluded from further consideration. (4) Thrombophlebitis as a complication or sequela of infectious diseases, such as enteric fever or influenza (5) Intramuscular thrombophlebitis This variety is not mentioned in either Allbutt's or Osler's Systems of Medicine Certain specialists profess to believe that both phlebitis and thrombosis are due to micro-organisms or their toxins I will endeavour to answer these questions by the citation of appropriate cases

Ætiology.

Predisposing Causes—Thrombosis is supposed to be due to one or more causes, viz :—

(1) Damage to the lining cells of the vein

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* Read before a meeting of the Harrogate Medical Society

[1] Schwarz, Gottfried · Phlebitis Migrans, Virch. Arch. f. Path. Anat 1905, clxxxii, 178

[2] Briggs, J B Bulletin Johns Hopkins Hospital, 1905, xvi, 228

(2) Retardation of the blood stream and changes in the blood increasing its coagulability When the endothelium is well nourished and there are no micro-organisms present thrombosis is unlikely to occur. Barcroft has shown the fundamental importance of oxygen for the life of the tissues.

(3) *Chlorosis*—Thrombi occurring in chlorotic subjects are probably due to changes in the blood The endothelium of the veins must be imperfectly nourished when there is a marked diminution of the hæmoglobin in the circulating blood

(4) *Gout*—Sir James Paget stated that in gout phlebitis "affects the superficial rather than the deep veins and often occurs in patches, affecting (for example) on one day a short piece of the saphenous vein, and on the next day another separate piece of the same, or a corresponding piece of the opposite vein It shows herein an evident disposition towards being metatastic and symmetrical; characters which, I may remark, are strongly in favour of the belief that the essential and primary disease is not a coagulation of the blood, but an inflammation of the venous walls" Sir William Roberts suggested that the presence of scattered crystals of sodium biurate in the blood may constitute foci around which thrombi may be formed a far-fetched theory Another writer suggests that gouty phlebitis is due to an intoxication arising from the alimentary canal Coates and Raiment estimated that the calcium in normal human blood was about 10 mg per cent In the blood of gouty subjects it varied from 16 mg per cent to 24 mg. per cent It must be obvious that this great increase in the blood calcium would render gouty subjects liable to attacks of thrombophlebitis

(5) Parturition, especially after severe hæmorrhage.

(6) Infectious diseases, such as enteric fever and pneumonia A peculiar feature is that in thrombosis complicating an infectious disease the specific micro-organism of that affection has never been discovered in the clot An American writer expressed the opinion that tobacco predisposes to phlebitis

Apart from toxins the most common exciting cause in my experience is a chill—more especially if this is immediately preceded by either mental or physical fatigue There are all grades of severity, from a simple phlebitis up to a complete blocking of the femoral vein The greater frequency of venous thrombosis in the left leg is attributable to the greater length and obliquity of the left common iliac vein and its passage beneath the right common iliac artery It has been suggested that the pressure of a distended sigmoid flexure or rectum may contribute to slowing of the blood stream on the left side

Symptoms

The initial signs of phlebitis and thrombophlebitis are as a rule identical when a superficial vein is affected A small patch of cellulitis over a vein can be seen, somewhat reddish, or purplish-red in tinge, and on gentle palpation a slight brawny thickening can be felt The history of the attacks is, however, different. In simple phlebitis the patient is generally unaware that there is anything the matter until he gets out of bed On walking he feels pain in the affected part In thrombophlebitis the patient awakes during the night with pain in some part of the leg, and if he has had a previous attack he can, with some assurance, suspect the probable diagnosis In simple phlebitis, when the cellulitis subsides, the vein will be found permeable, so that the patient may get up in five or six days It is a wise rule to keep him in bed for at least a week in case of a recurrence in the same or another vein With thrombophlebitis, after two or three days there will be felt one or more clots which will either become absorbed or organised so that the vein becomes permanently-occluded When a superficial vein is thrombosed the pulse and temperature are unaffected, unless the clot is extensive or septic The long saphenous vein has from 10 to 20 valves, more in the leg than the thigh A clot generally extends up to the next valve, but if the patient goes about it may extend further It has been stated that inflammation of the left saphenous is more painful than the right on account of the close proximity of the left saphenous nerve to the vein I have seen five cases of simple phlebitis occurring in gouty or rheumatic subjects where no septic focus could be detected My case-book shows a larger number of cases of thrombosis, in some of them without any detectable sign of infection. Instead of referring to the symptoms of the more severe forms of thrombophlebitis the better plan will be to describe cases illustrating special points in the different degrees of severity.

Clinical Records

CASE 1—A patient sat in a cold room until his feet were icy cold He awoke about 4 A.M. with *pain in the left leg* Ten grains of aspirin relieved the pain When I saw him there was a clot about the size of a small marble in the lower part of the left calf about 4½ inches above the ankle. On movement the pain was rather severe owing to the vein dipping beneath the fascia When the affected vein is on the inner side of the leg below the knee the pain, if any, is negligible unless the part is palpated rather too firmly Generally the patient is quite comfortable unless he exerts himself The clot completely disappeared in five weeks

CASE 2—Last March a patient had an attack of thrombophlebitis of the right circumflex iliac vein When I saw him some weeks afterwards there were four distinct clots to be felt On palpation they gave the impression of small indurated glands They have practically disappeared now—only a slight thickening remains About four months ago he had a patch of cellulitis over the right superficial epigastric vein It was about the size of a five-shilling piece On gentle palpation nothing could be detected except a slight thickening of the subcutaneous tissues Two days later there were three clots present in the vein They have not quite subsided yet Six weeks later he had a boil on his hand which was excised A culture showed the presence of the *Staphylococcus aureus* Examination of the blood was negative

CASE 3—A patient about 55 A gouty subject, had fibrositis of the lumbar and right gluteal regions and of the fascia lata for which he was having dry massage The masseur after a fortnight's treatment noticed one day that he had œdema of the right ankle, and asked him to see me at once He had no pain on exertion, and apart from the œdema there was no swelling of the cutaneous tissues I examined the calf of the leg carefully but failed to detect any tenderness On palpating the front of the leg he thought it was a trifle more sensitive over the anterior tibial artery compared with the other leg Three days before the appearance of the œdema he put on riding-breeches which were too tight and rode a bicycle for 40 miles The œdema disappeared in three weeks' time after complete rest His teeth had been extracted, and his nasopharynx appeared normal

Regarding œdema, the obvious explanation is that it is due to venous obstruction, to a filtration of the blood serum in consequence of the increase of intravenous and intracapillary pressure as a result of the blocking of a medium or large-sized vein This explanation is not quite so satisfactory as at first sight it appears The problem is a complex one, and there are certain undetermined factors at work which are interwoven with the processes of lymph formation and lymph absorption

CASE 4—A gouty patient caught a chill one evening While he was having a bath next morning he noticed the left calf was larger than the right This was confirmed by measurement On examining the leg he could not detect any tender spot There was no pain or discomfort in the leg He lay on a couch all day with the leg elevated, and at bedtime put his knee on a chair and slid it along to the bedside Next morning the left leg was nearly double the size of the other The doctor told him his femoral vein was blocked. During the four months he lay in bed he never had any pain in that limb, merely an intermittent sensation of tenseness over the shin

An interesting question in connexion with this case is, can there be phlebitis of a large vein without pain, or, *alternatively, can* thrombosis occur without the supervention of phlebitis? The vein remained blocked for 12 months when the œdema disappeared and the leg became perfectly normal in size It is one of the miracles of pathology how a vein obstructed for over a year can again become permeable

About six weeks after this attack, the patient was reading in bed one night and did not notice that the window was wide open until the right foot felt very cold; the affected leg was encased in cotton-wool from the foot upwards A hot water-bottle was applied immediately to the foot. He awoke about 3 A.M. with severe pain in the right calf Fifteen grains of aspirin taken two hours later gave complete relief, and the pain did not recur That day the doctor stated there was œdema of the ankle, and over the lower end of the tibia, but there was very little swelling of the leg—less than an inch. Previously the leg had been measured, to compare it with the left. If pressure was applied to any part of the leg there was marked tenderness, otherwise there was no discomfort except whem the leg was moved. The condition was diagnosed as intramuscular thrombophlebitis, this opinion being subsequently corroborated by a London specialist. The œdema did not disappear for eight months It should be mentioned that the patient's pulse and temperature remained normal throughout his illness, and that no septic focus was detected. This happened 10 years ago and both limbs have been normal in size ever since.

Years ago I saw a number of cases of phlegmasia alba dolens after parturition, influenza, and enteric fever Some of the patients had permanent enlargement of the leg, especially after exercise, due to œdema

Treatment

When the temperature is 102° F. or over it is advisable for a surgeon and physician to meet and discuss the treatment to be adopted If the temperature is over 101° and there are recurring rigors, the case should be seen by a surgeon also I shall only deal with those cases where the temperature is either normal or not over 101°

On examining a patch of cellulitis over a superficial vein, only the gentlest palpation is permissible on account of the danger, if a thrombus be present, that a portion of it may be detached; in fact, it is safer not to touch the affected part for the first three days The diagnosis cannot present any difficulty The chief essential is rest in the semi-recumbent posture when a superficial vein is affected, and in the recumbent position if a larger vein is involved I should like to stress the point that absolute rest is the important factor in treatment

The foot of the bed should be raised, and the so-called cradle used to protect the limb from the weight of the bedclothes A pad should be placed under the heel A hot fomentation of boric lint covered with yellow oil silk and lightly bandaged should be applied to the cellulitic patch If there is pain, lead and opium solution, or preferably glycerine of belladonna, may be used. If a deep vein be affected, other preparations have been recommended, such as, ouataplasme and antiphlogistine Shortly after the onset the whole limb should be wrapped in cotton-wool, or gamgee tissue, and kept in position by a many tailed flannel bandage This device can be changed every night or twice daily If pain still persists a cachet of magisal 7 gr, pyramidon, 6 gr, and caffeine citrate, 3 gr, may be given every four hours If four cachets do not give relief, a hypodermic injection of morphine should be used, but I have not seen a case requiring morphine The patient should be warned against sudden movements in bed It is the merest commonplace to say that particular attention should be paid to the alimentary tract both as regards a satisfactory evacuation of the bowels daily, and strict attention to dietetic restrictions the chief desideratum being a reduction in the intake

In thrombosis of a superficial vein the patient may get up to the commode placed alongside the bed, but if the femoral vein is affected, he must submit to the use of the bed pan I do not think there is any risk when a superficial vein is affected in using the commode, as the patient can slide on to the night-stool without jerking the affected leg, or putting his weight upon it The patient may be sponged daily with eau-de-Cologne, the back and gluteal regions should be thus treated four or five times each day to prevent bed-sores An intensely disagreeable symptom, becoming prominent after the sixth week, is an indescribable ache in the lumbar region It is more exasperating than a pain, because the latter one can relieve whereas the former resists more or less any remedial measures Air cushions are in most cases useless I have tried a large cotton-wool pad with the centre cut out, but it made the patient uncomfortably hot. In future I shall use a liniment consisting of menthol ʒ ii, lin belladonna ʒ iii, to lin chloroformi ℥ ii It is the most likely application to give temporary relief When the femoral vein is thrombosed gentle effleurage from below upwards may be prescribed two or three months after the onset, but it is quite unnecessary in thrombosis of a superficial vein

The question, "When may I get up?" is frequently asked It is wise to err on the safe side, and say from four to six weeks, if a superficial vein is thrombosed, but as regards a large vein the answer depends upon the severity of the attack, and the condition of the patient Even when the pulse and temperature are normal, and the patient feels quite well, it may be necessary to keep him in bed from three to four months if the femoral is completely thrombosed, as there is a considerable strain upon the superficial veins

Regarding drugs, Almroth Wright recommended citrate of sodium in milk; later on he substituted citric acid 20 gr. in water twice daily, which is quite a pleasant drink, and so far as I know cannot do any harm If a septic cause is suspected, collosal manganese orally has been recommended Apart from any therapeutic influence, the administration of a drug may have a psychological effect upon the patient, and in treating disease every little thing may be helpful; it is extremely difficult to assess the value of any subsidiary remedy.

If a patient has had more than one attack of phlebitis, he ought, if possible, to undergo the treatment at Bagnoles de L'Orne From the evidence the waters and baths of this place seem to possess peculiar properties in the prevention of phlebitis.

Clinical and Laboratory Notes.

A CASE OF RAT-BITE FEVER

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AND
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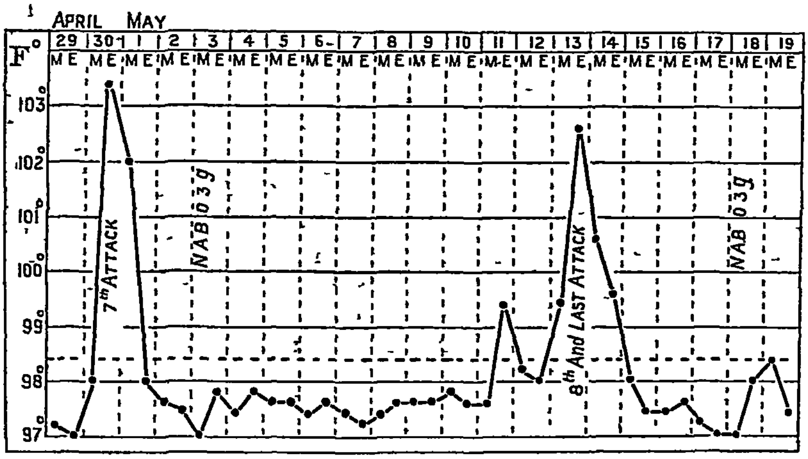
THE following notes of a case of rate-bite fever are thought worthy of record not only on account of the comparative rarity of the condition in this country, but also because certain signs usually regarded as typical were absent

J K, aged 25, a farmer, was first seen on March 14th, 1925, on account of headache, nausea, severe limb pains, and weakness of remarkably sudden onset His previous medical history was uneventful apart from a very mild attack of malaria during the war, from which he had completely recovered

On examination the temperature was 102° F. and the pulse-rate 120; the pulse was small and of poor volume The blood pressure was 100/80 He was sweating profusely, and a faint blotchy erythematous rash was noticed on the trunk and limbs The liver and spleen were not enlarged and the abdomen was soft and painless to pressure The lungs were normal and the urine was free from albumin and sugar A small bilious vomit contained no free hydrochloric acid The clinical picture was that of extreme prostration such as is seen in influenza, a diagnosis which was rendered more probable by the occurrence of several other cases in the locality After 24 hours the temperature and pulse were normal and the patient appeared himself again.

Eight days later these phenomena were exactly repeated, and on this occasion, in response to a leading question, he admitted having had a rather severe rat bite about two months previously. The bite had healed rapidly, and he had not connected the inciden with his subsequent illness A soundly healed painless scar was visible on the left hand, no enlargement of lymphatic glands was noted either on this or subsequent occasions A blood-count gave the following result red cells, 4,560,000 per c mm, hæmoglobin, 85 per cent.; leucocytes, 16,000 per c mm, of which 89 per cent. were neutrophil polymorphs In films stained by Leishman's and Giemsa's stains no parasites were seen, the only abnormality being the presence of many red cells showing punctate basophilia A broth culture was negative



Temperature chart in a case of rat-bite fever

Unfortunately, no other method for identifying the *Spirillum morsus muris* was carried out.

The patient continued to have febrile attacks every eighth day until on May 3rd, two days after his seventh, he was admitted to the Evesham Hospital and given novarsenobenzol 0 3 g intravenously. Following a slightly longer interval, nine days instead of seven, he had his eighth attack and a further injection of N A B, 0 3 g was given, since when he has been perfectly well

In view of the history, the long incubation period, the clinical phenomena, and the rapid response to treatment by N A B it can scarcely be doubted that this was a case of rat-bite fever, and we wish to draw special attention to the fact that at no time were there signs of recurrent inflammation in the wound, which remained healed and painless throughout, nor enlargement of the lymphatic glands Judging from the published accounts (1, 2, 3, 4, and 5) this is quite exceptional, if not unique, and adds to the difficulties of diagnosis where a prolonged incubation period and absence of all local symptoms combine to conceal the original infection

References —1 Horder, T J Quart Jour Med, 1910, iii, 121 2 Low, G C Brit Med Jour, 1924, i 3 Collier, W T Ibid., 1924, ii, 265 4 Douglas, S R., and others THE LANCET, 1918, i, 253 5 Herzfeld and Mackie, T J Edin. Med Jour, October, 1926

UNUSUAL MISDIAGNOSIS IN A CASE OF ACUTE INTESTINAL OBSTRUCTION

BY C E H ANSON, M R C S ENG,
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THE following case is of interest as an example of an unusual error in diagnosis

A man, aged 65, was admitted to King's College Hospital on August 18th, 1926, with acute intestinal obstruction The acute symptoms were relieved on admission by an asafœtida enema. The patient gave a history of a dull pain in the hypogastrium for three weeks He had also been getting constipated, the motions becoming smaller in quantity and very hard, though of normal shape and colour There had been no diarrhœa, and no blood or mucus in the stools Defæcation had become increasingly difficult with much tenesmus Micturition was normal, except that the quantity of urine had diminished slightly three days after the onset of constipation.

Condition on Examination —Pulse-rate 84, temperature, 98 4° F. Abdomen distended and prominent, movements normal, no rigidity, no tenderness Hypogastrium dull to percussion, with shifting dullness in both flanks Liver, spleen, and kidneys not palpable On rectal examination a hard nodular mass about the size of a large egg was felt in the anterior wall of the rectum, 2 in, above the external sphincter It was not movable, and the surface felt as if it was ulcerated, but no bleeding occurred on examination. A diagnosis of carcinoma of the rectum was made and as obstructive symptoms increased, a colostomy was performed by Mr Cecil P. G Wakeley on August 20th

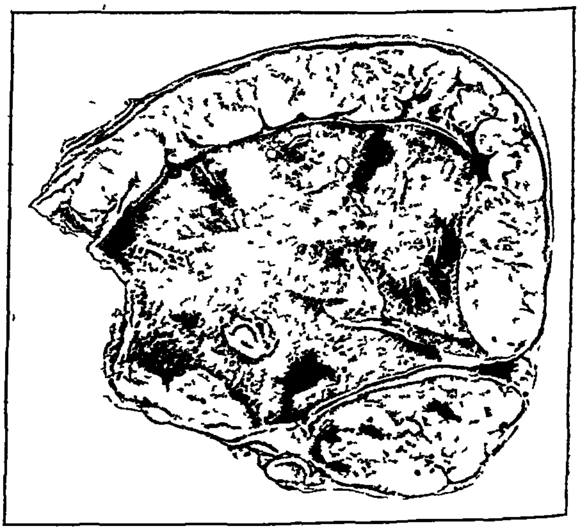
Operation —A paramedian incision 3 in. long was made through the left rectus muscle, and the peritoneum was opened A condition of diffuse carcinomatosis was found with small nodules over the small gut and colon, and also in the mesentery About three pints of dark-brown ascitic fluid was drawn off, and a colostomy performed. The gut was opened, a Paul's tube was tied in, and the wound was sutured and packed round with iodoform gauze and a powder of boric and salicylic acids to prevent ascitic oozing

Progress —On the day after operation the patient vomited 30 oz. of foul coffee-grounds vomit There was slight action of the colostomy, but although purgatives were given freely an action of the colostomy became increasingly difficult The liver and spleen became palpable on Oct. 4th, and the patient died on Oct. 23rd

Autopsy —Body was greatly emaciated; both lungs showed collapse and broncho-pneumonia at the bases Heart muscle showed brown atrophy

The peritoneal cavity was almost completely obliterated by adhesions and carcinomatous growth, and there were numerous small nodules on the abdominal wall and over the surface of the gut. A huge mass of carcinoma was found beneath the left lobe of the liver, slightly adherent to it and to the stomach, but not invading the stomach wall Beneath the right lobe there was a large abscess containing foul, greenish pus On examining the mass felt per rectum, it was found to be a secondary deposit situated between the rectum and bladder As it was obviously not the primary growth, the viscera were removed in toto with part of the posterior abdominal wall, they were hardened in 10 per cent formalin, and a detailed dissection was subsequently made

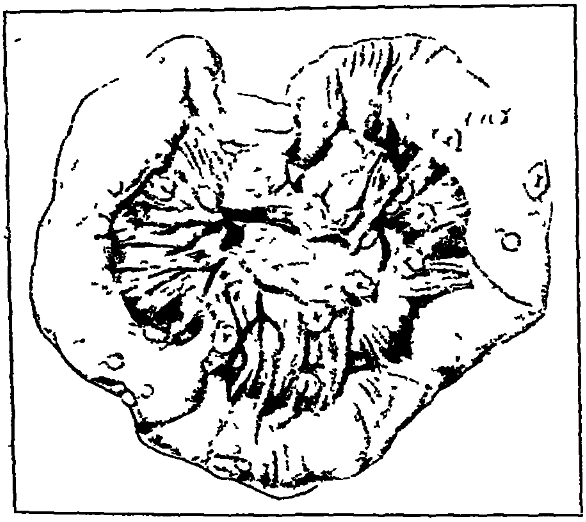
FIG 1.



Section through liver showing the growth surrounding the periphery of the organ in the form of a capsule, while leaving normal liver tissue, free from any secondary deposits, in the centre

The dissection showed a large, soft, fungating mass of carcinoma of the typical cauliflower variety filling the cæcum and occluding the ileocæcal valve. The large mass of growth, already referred to as lying below the left lobe of the liver, was found to be a huge secondary deposit in the preaortic glands Spreading out from it were numerous nodules in the mesentery which were almost confluent at its base, but became more sparsely scattered as the free margin was approached The splenic hilum was invaded by growth spreading from the region of the cœliac group of preaortic glands, and the periphery of the liver was invaded by a mass of growth which completely encapsuled the organ, the enclosed liver tissue being perfectly normal (Fig 1) The duodenum and stomach were normal, although part of the greater curvature was adherent to the spleen and to the mass of growth springing from the preaortic glands The pancreas, kidneys, and prostate were normal

FIG 2.



Coil of small intestine, showing secondary deposits in the mesentery which become more sparsely scattered as the border of the gut is approached also the superficial deposits in the peritoneum covering the surface of the gut

Microscopic examination of the primary growth in the cæcum showed a typical adenocarcinoma with very well-marked colloid degeneration The secondary deposits in the peritoneum over the small gut and colon, and invading the periphery of the liver, were of similar structure, as was also the mass lying between the rectum and bladder This deposit of growth had penetrated the muscular coats of the rectum and invaded the mucosa, being just about to ulcerate into the lumen of the rectum

Discussion.

This case offers an interesting example of misdiagnosis, the error being chiefly due to the unusual position of part of the secondary deposit—namely, between the rectum and bladder In the light of the above findings, it appears that doubts might have been raised as to the correctness of the diagnosis by the continuation of some degree of obstruction after colostomy and also by the evidence of extensive secondary deposits, although the primary seat of growth in the rectum had not yet ulcerated through into the lumen of the bowel. On the other hand in carcinoma of the cæcum, secondary deposits are usually late in appearance, and, moreover, relief of obstruction occurring at the ileocæcal valve would not be expected to follow the operation of colostomy

There seems little doubt that in this case the original attack of acute obstruction relieved by colostomy, was due to the combined action of the growth obstructing the ileocæcal valve and the secondary mass narrowing the lumen of the rectum below The failure of the colostomy to act freely and the subsequent increasing obstruction were due to the primary seat of growth obliterating the ileocæcal valve more and more completely until finally almost complete obstruction again resulted Another unusual feature is the fact that there was a comparatively early and typical primary growth in the cæcum, with very extensive secondary deposits all over the peritoneal cavity

The case presents rather a striking example of the spread of the carcinoma by at least two well-defined and separate paths—viz, peritoneal and lymphatic spread The peritoneal spread is shown by the presence of small nodules in the peritoneum of both the anterior and posterior abdominal walls, while the secondary nodules situated on the surface of the small gut were also seen in the peritoneum and even microscopic examination showed that only the outer portion of the muscular coats of the gut had been invaded, the mucosa being quite intact A peritoneal spread, moreover, offers the only satisfactory explanation of the rare phenomenon of a complete carcinomatous capsule surrounding the liver and infiltrating its periphery for about an inch, while the central portion was left completely normal with no trace of any secondary deposit in its substance The mass lying in the recto-vesical pouch which lead to the error in diagnosis was due either to direct peritoneal spread or to a small mass of carcinoma cells becoming detached into the peritoneal cavity and then falling into the rectovesical pouch, there undergoing development. The lymphatic spread is shown by enlargement of the ileocolic groups of glands, which could be traced upwards until the huge secondary mass lying in the superior mesenteric group of preaortic glands was reached Further lymphatic spread from this point along the superior mesenteric afferent lymphatics was shown by the nodules of growth becoming more sparsely scattered through the mesentery as its periphery was approached (Fig 2) while at its base they formed a large confluent mass of carcinoma as already described The deposit at the splenic hilum was due to the permeation of growth from the superior mesenteric group to the cœliac group of preaortic glands and thence along the afferent vessels to the splenic hilum

It must also be mentioned that two small secondary deposits of growth were found *in* the sternum, opposite the seventh left and third right ribs respectively. This would appear to indicate some dissemination of the growth by the blood stream, although no further evidence of such a path of spread could be found. It is moreover, rare to find secondary carcinomatous deposits in bone where the primary seat of growth is the cæcum

I wish to express my thanks to Mr. Cecil P. G. Wakeley for permission to examine and record this case.

A NOTE ON THE
RELIEF OF MIGRAINE
BY THE ADMINISTRATION OF CONCENTRATED SALTS

By H C ROOK, M.B, B S LOND,
PHYSICIAN TO WORCESTER GENERAL INFIRMARY

THE treatment of migraine has taken many forms, both before and since E Liveing published his celebrated monograph The old idea that it was hepatic in origin has gradually given way to the modern theory of fatigue, eye-strain, or some endocrine defect. It would appear that a combination of the old and modern theories is the correct view. and that migraine, at any rate in a percentage of cases, is caused by a hepatic toxin, which in predisposed subjects may be produced by nervous over-action or inhibition Explanation of the action of this toxin is undoubtedly difficult, but migraine occurs chiefly in people with a highly sensitive nervous system, and it should be remembered that toxins both organic and inorganic, often show a predisposition to pick out and attack certain portions of the nervous system

The cases observed belong to Liveing's second type. They are consecutive, and none of them below failed to respond immediately to the method described. So long as treatment was continued the attacks completely disappeared or only showed as transient headaches without prostration or vomiting, but it was noticed that the first three cases ceased treatment after a time, to resume of their own accord when the symptoms reappeared The shortest time which the condition had lasted in any of these cases was 15 years, and every kind of treatment had been previously tried without success, except that in two cases massive doses of sodium bicarbonate had given relief for periods up to three months Both had subsequently failed to respond to this, and for a time the attacks became more severe

Particular attention is called to Case 3, in which, owing to marked distaste, cholecystenterostomy was decided on, with a view to direct drainage of the gall-bladder At operation, however, this was found to be very small, tightly tucked up under the liver and surrounded by adhesions, there were no gall-stones This was most unfortunate, since had the operation been completed and resulted in improvement, it would have been additional evidence of hepatic origin

Clinical Records

Case 1—Female, aged 65, married, no children An old Army nursing sister Migraine attacks about every three weeks or a month for 40 years Was free from attacks for three months on one occasion when she took large doses of bicarbonate First came under treatment in 1924 No attacks as long as treatment is continued but relapses if discontinued, but the attacks are not so severe General condition much improved Complexion, which used to be sallow, now a much better colour

Case 2—Female, aged 40, married, two children, one a girl, healthy, and one a boy, aged 10, who suffers from severe acetonæmia with occasional outbreaks of bullous urticaria papulata She first came under treatment in 1924 and showed immediate improvement, but owing to hæmorrhoids stopped treatment, after which the attacks of vomiting and hemicranial headache returned but not so violently Under modified treatment she has now had no attacks for 12 months General condition and complexion much improved and is now putting on weight Her mother and sister are similarly affected

Case 3—Female, aged 45, married, two children, one (boy) suffers from acetonæmia and has had attacks of urticaria papulata Frequent attacks of migraine since a girl, with vomiting for four or five days at a time Highly neurotic No attacks as long as treatment is continued General condition improved but does not persist with treatment owing to distaste Operation (supra)

Case 4—Female, aged 32; single Frequent attacks for many years, latterly every two to three weeks She has not long been under treatment but has had only one slight attack in the last six months and this was due to domestic worries

Case 5—Female, aged 35, married, no children Attacks of migraine since a girl and when first seen occurred fortnightly Dr B St Clair Roberts examined her eyes and reported no want of muscle balance or astigmatism Her father has recently had a stroke and this caused some return of headaches, but they are not so prolonged nor are they now associated with vomiting She again has only lately come under treatment but has had no real migraine attack for five months

It is unfortunate that the effects of fatigue and worry are so easily demonstrable in migraine and this has diverted attention from the real source of trouble—the liver Every one of these cases suggests a temporary poisoning of the nervous system and in the course of time the affected nerve cells become sensitised so that a relatively slight stimulus will originate an attack

Bennett and Venables showed that anxiety and worry affected the secretion of gastric juices in hypnotised subjects and it is not difficult to imagine that in patients with a low liver efficiency and a sensitive nervous system, some comparable inhibition takes place, resulting probably in acetone or one of its immediate derivatives being absorbed by the blood stream This was first noticed in the breath and in the urine in 1923, and formed the starting-point of the present investigation About the same time Venables's modification of Lyon's concentrated salts method of emptying the gall-bladder was first published, and this forms the basis of treatment.

Treatment

1 ℥ ii.–℥ iv of a 50% solution of magnesium sulphate is given one hour before rising, and following this, the patient is instructed to lie semi-prone on the right side

2 At the end of the hour a large tumblerful of hot water or hot weak tea is taken This is most important, since if the salts are not evacuated within two or three hours, a feeling of intense depression is produced which may result in an attack

3 Each case must be treated with regard to individual peculiarities and it is usually sufficient to give the concentrated salts once a week or once a fortnight, but they may be necessary twice a week at the commencement of treatment

4 The day or half-day previous to the salts is a starvation day, but this should be done not more often than once a week

5 Certain articles of diet must be strictly limited These are fats of all sorts, and in certain cases eggs, also chocolates, cocoa, coffee, and alcohol, especially spirits

6 Regularity of habit should be urged, and as far as possible, freedom from worry and fatigue

So many remedies have been tried and found wanting, that there must exist a healthy disbelief in any new form of treatment for this condition. That now described has the merit of being inexpensive and easy to carry out, and having regard to the immediate improvement which resulted, it is not too much to hope that with more general use a good percentage of cases of this condition will obtain marked relief by this treatment from their very distressing symptoms

Medical Societies.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

At a meeting of this Society held on March 25th, Dr Wilfrid Fox (Past-President) in the chair, there was a discussion on the

Place of Venereal Disease in the Medical Curriculum

Dr J H Sequeira said that in the combat against venereal disease—especially syphilis—the best investment was a high standard of knowledge throughout the profession In his early days it had been everywhere the custom for the surgeon to deal with venereal diseases in their initial stages, it was in the surgical out-patient department that the student was taught the differential diagnosis of primary syphilitic lesions as they affected the genitalia, but not all surgeons paid attention to blenorrhagia and its complications The surgeon also dealt with the secondary manifestations of syphilis and gummata when they involved accessible regions On the whole the result was satisfactory, as most of the men who had spent six months in the out-patient surgical clinics went into practice possessing a fair knowledge of diagnosis and treatment of the early, and some of the late, manifestations of syphilis And a share in the instruction was taken by the ophthalmic and dermatological departments But there was no compulsion on students to attend the skin department, and most of them were insufficiently instructed in the diagnosis and treatment of venereal disease in its earlier stages In those days the physician stood sublimely aloof from the more sordid aspects of syphilis; he only took an interest in the results of spirochætal infection when life was gravely threatened Dr Sequeira then recounted the events which culminated in the Royal Commission on

Venereal Disease, and said that before the Report of the Commission was issued Mr Frank Kidd had developed the treatment of gonorrhœa on modern lines at the London Hospital Genito-urinary Clinic and he himself had done the same for syphilis in the skin department.

An Ideal Course on Syphilis.

An ideal course on syphilis, said Dr Sequeira, would include contributions from the bacteriologist, serologist and pathologist, with demonstrations by the dermatologist, general physician and surgeon, neurologist, ophthalmologist, and laryngologist. Such a course was given in the early part of 1914 at London Hospital to post-graduates and senior students. It was a great success, but the war prevented its repetition. Then came the inauguration of a special service to deal with venereal diseases, the prime objective of which was to cope with the greatly increased incidence which followed war.

It would be generally agreed that the newly qualified practitioner should be able to diagnose at sight a straightforward case of primary or secondary syphilis and to take blood for a Wassermann test, or a specimen of serum to send to a laboratory. He should have been shown diagnosis by dark-ground illumination, but Dr Sequeira did not think that many men should be expected to give a satisfactory diagnosis by this means if they had left hospital some considerable time before. Also the practitioner should have learnt the technique of intravenous injection and the dangers and complications attending it. Everyone would admire Colonel L. W. Harrison's efforts to make of every general practitioner a venereal expert, but even what he described and the expensive apparatus he recommended did not apply to many general practices.

In cases of suspected gonorrhœa the student must learn to take the laboratory specimen, and must have some acquaintance with the technique of treatment, though it seemed advisable that care should be taken to check the wholesale irrigation which swelled the number of attendances in the clinics and which, he was credibly informed, materially helped the birth control movement by its effects on the posterior urethra.

State-aided Clinics and the Instruction of Students

Dr Sequeira could see no reason why the clinics supported by the State and local authorities should not be used for the teaching of students, but admittedly difficulties were encountered in practice. The kind of difficulty he had in mind was illustrated by the following incident. The staff responsible for venereal treatment at a hospital met representatives of public bodies to discuss developments requiring money, and the medical representatives were warned, before the meeting, that the question of teaching facilities must not be introduced into the discussion, otherwise the funds would not be forthcoming. One of the gentlemen who answered Dr. Sequeira's questionnaire mentioned that, by agreement with the officials of the financing bodies the medical officers did not give long demonstrations which would suggest to the patients that they were teaching students, and that students who were clerking in the venereal disease departments were given the title of "clinical assistant." Why, he asked, should there be this atmosphere of dissimulation? To instruct students there must be adequate opportunity—i.e., sufficient cases. It was said that the number of patients attending a clinic depended on the way that clinic was advertised. But the great medical schools should have the preference, as only in them could the greatest number of medical practitioners be taught. All should be run on equal terms. He asked whether it was proposed to teach venereal diseases at certain centres, as fevers were taught at the Metropolitan Asylums Board Hospitals. He hoped not, as the student's curriculum was already over-full and it would be disastrous to extend it. The time usually allotted in the schools for attendance in the venereal disease clinics was three months; some schools required attendance at 12 demonstrations. Attendance was now usually compulsory before the student presented himself for his final examination, but at one school it was still optional. In most cases the student's fifth year was regarded as the most appropriate stage for this venereal disease instruction.

Conclusions

Dr. Sequeira wished there were no special place for venereal disease teaching in the student's curriculum; there should be adequate instruction in the diagnosis and treatment of syphilis in all its stages. He held that the student was best taught about the primary stage and the cutaneous manifestations of the disease in the skin department. Adequate instruction should also be given in the diagnosis and treatment of gonorrhœa. If for administrative purposes, nothing better could be proposed than the making of ad hoc clinics, he urged that the heads of these departments should be part-time officers having a wide outlook and he would prefer that they should be younger members of the staff of a teaching hospital. Nothing could be worse he thought than the production of a class of venereal disease specialists locked up in their own narrow sphere whose efficiency was gauged by the increasing number of attendances, absence of complaints and optimistic reports.

Discussion.

The **CHAIRMAN** said that he had always held that the success of a scheme depended largely on the man. In the early days venereal diseases were taught by the surgeons, who were very bad at it: it had been a revelation to him when he went to the St. Louis Hospital, Paris, for a course of instruction on the subject. Many of the devices at clinics were employed to induce patients to undergo treatment, and if it were thought there was anything like experimentation by students many would be shy of coming, and would go to quacks. One difficulty was that at the hour when clinics were usually held the student had finished his day's work. But when the student attended there must be plenty of cases.

Mr **WANSEY BAYLY** thought that students should be taught the importance of radiography, as sometimes syphilis left sequelæ which X rays revealed.

Sir **JAMES DUNDAS-GRANT** said that in a startling number of cases syphilis was found to be the causal disease; it might be overlooked for instance, owing to the respectability of the patient. A tendency to give a hopeful prognosis in syphilis often had untoward results.

Colonel **L. W. HARRISON** said that he gathered that Dr. Sequeira would have no special place in the curriculum for the teaching of venereal diseases but that the student should be taught about them in all departments of the teaching school. That had been the custom in the past, and the result had been that one great cause of the spread of these diseases was lack of knowledge by doctors passing out of the medical schools. This was bound to be the result of teaching the subject in fragments. It was now too large to be divided up; it should be grouped into one department. The knowledge of the average man to-day was greater than formerly, and this was because the subject was taught where cases of venereal disease mostly congregated. Nowadays it was particularly important that the teaching should be in these centres for arsenobenzol quickly changed the features of the disease in a patient. He would teach venereal diseases in a venereal disease department starting almost from the first with the laboratory. It was very important that the student should appreciate the pathological as well as the clinical side—that he should thoroughly understand what was taking place inside the patient. It was generally agreed that the standard of diagnosis and treatment of these diseases in the Army had been raised from the date of the establishment of the school in connexion with the hospital in Rochester Row And the experience was that the clinics were better managed by men who had been taught in special venereal disease clinics and hospitals than by those who had been taught in a number of different departments in a general hospital In his own department he found no difficulty in teaching, neither had he difficulties with patients He thought the fear of patients taking offence, or of a pledge of secrecy being broken, was nothing more than a bogy

Dr H M **HANSCHELL** thought that venereal disease should be taught in the department which was in the position to treat it best—namely, the venereal disease department The house physician in a hospital had many other things to attend to, and would find it a nuisance to administer the drug, a drug, moreover, which he did not yet know enough about. Even in dermatological departments of hospitals he did not think it was usually taught efficiently Hospital staffs seemed to welcome having a venereal disease department to which cases could be transferred for treatment, and where students could see cases from the beginning to the cure

Dr W J **O'DONOVAN** emphasised the importance of teaching principles, which was of more value than teaching syphilis as syphilis. Some of the manifestations of this disease came primarily into special departments Acute iridocyclitis, in which there was a red and painful eyeball was as dangerous to sight, if not speedily treated, as was glaucoma Its differential diagnosis must be taught with that of other ocular lesions, and this teaching, along with the appropriate treatment, could not be given efficiently in a venereal disease department It was impossible to escape the necessity of teaching syphilis in every department of a teaching hospital In the matter of treatment, however, a special claim could be made for beds The principle that venereal diseases must be kept separate implied that no one should take part in their treatment except the member of the staff in charge of the special department for them He must run the whole department with all the specialties involved

Dr A M H **GRAY** thought that a practical mean could be found between the views of Dr Sequeira and Colonel Harrison All agreed that it was essential to have a properly organised treatment department, and the only question was as to diagnosis He felt that it was a great advantage for the student to see cases of syphilis in conjunction with cases of other diseases It would be a tragic thing if syphilis were to be entirely removed from the various special departments It had been his experience that in some hospitals the genito-urinary surgeons did not take much interest in acute gonorrhœa, and many cases of it were sent straight away to the treatment department Hence it was important that the student should attend that department, not only to see early cases, but also to follow up the treatment He had found but little difficulty in getting students to attend evening clinics, but they did not come as regularly or as often as they should It would be different if questions on the subject were set in the examinations, which it was the students' immediate objective to pass Attendance at his own clinic was compulsory, but the compulsion was not drawn too tightly.

Dr. **DENNIS VINRACE** said that every practitioner should know something about every disease, and a specialist should know all about his own department Syphilis, he thought, had usually more importance attached to it than it deserved, and prevalence of these diseases had also been much exaggerated If a man wished to specialise in them he should obtain an appointment as house surgeon at a V D. hospital, or as assistant in a clinic

Dr **MORNA RAWLINS** said that she found the attendances of students at the clinics good, and there seemed little difficulty in getting patients to come But gonorrhœa in women was difficult to demonstrate to a number of students

Major E C **LAMBKIN** spoke of the disappointment in Army medical circles when the special hospital at Rochester Row had to be closed, as the subject had not been properly taught in the Army until the hospital was organised Syphilis had now practically disappeared from the Army and only half a dozen beds were needed for it. Each special venereal hospital should have a special venereal laboratory For teaching purposes, he thought that V D cases should be concentrated in one special department

Colonel E G. **FFRENCH** said that he was a great believer in having special departments for these subjects in the hospitals, and favoured attendance at them being made compulsory. The general practitioner nowadays treated venereal disease himself instead of sending cases to the specialist

Dr. F. J. H. **COUTTS** said it was highly important that the general practitioners of the future should have a real knowledge of venereal diseases If a student was not taught differential diagnosis when he was passing through special departments there was something wrong with the teaching

Dr **DOROTHY LOGAN** said that at one time syphilis was met with in the surgical out-patients, in the medical wards, in the eye department and elsewhere, but there was no means of getting a continuous idea of the disease, such as the special department could now put before the student She agreed that all departments should combine in giving this knowledge.

The **CHAIRMAN** reminded the meeting that the prime object of the Bill which was brought before Parliament had not been to secure tuition of the medical student Training centres had been instituted by far-sighted people who knew of the ravages wrought by these diseases after all great wars, in order to cut down the incidence rate to the lowest possible figure And the clinics had certainly justified themselves In the campaign very great help was given by the lay press The coöperation of various specialists was required in order to demonstrate differential diagnosis The policy of the Society had been to secure the help of those not specially interested in venereal diseases as a safeguard against an exclusive specialisation

Dr **SEQUEIRA** briefly replied, reminding his hearers that his theme had not been the training of venereal disease experts, but the tuition of the medical student in those subjects

Dr **HANSCHELL** showed a case of

Climatic Bubo

The patient was a seaman (white), aged 43, who said that 20 years ago he had a wart on the glans penis It had been cauterised, and left a scar He had never had any other lesion about the genitalia. Nine weeks ago he was in Mauritius, and seven days after coitus the glands in the groin began to enlarge and become painful He was ill, and had to cease work At present there was nothing to be seen about the scrotum or penis His temperature varied between 99° and 100° F, the Wassermann was negative, and the blood did not contain filaria Climatic bubo, said the speaker, was fairly common in the tropics, and it seemed to be a venereal disease, because nearly always there was the history that it occurred a short time after connexion It had not yet been reported in a woman In men it was commonest in the uncircumcised A specific organism had often been searched for, but so far had not been discovered The usual treatment was to excise the infected glands, but it was found that they were all involved, and deep down After such large removal he had seen elephantiasis of the penis supervene The best treatment he had found was the intravenous injection of typhoid bacilli, this caused subsidence in a few days, and the illness was limited to a week or two He used in this case a stock vaccine, and began with 100 million, intravenously with the man fasting The dose was repeated in four days

ROYAL SOCIETY OF MEDICINE.

SECTION OF EPIDEMIOLOGY AND STATE MEDICINE

At a meeting of this Section held on March 25th, Dr S Monckton Copeman, the President, who took the chair, opened the proceedings with a reference to the recent death of Dr John Brownlee

Dr. W S McClure (Manchester) read a paper on the

Incidence of Pneumonia

During the last ten years, he said, 398,523 deaths from pneumonia had occurred in England and Wales The mortality was greater in the North than in the South, and greater in urban than in rural districts. Any rise or fall in the rate in England and Wales was shared alike by the North, the Midlands, and the South, there was, therefore, some factor, common to the country as a whole which influenced the prevalence of this disease Mean air temperature was closely correlated with mortality from pneumonia, but climatic conditions were not responsible for the heavier incidence in the North. Fog was a minor and unimportant factor, but contributed to the occlusion of light from towns, absence of sunlight lowered the human vitality, though there was no evidence that it was a determining cause of pneumonia. Relative excess of the disease in the North was equalled by the excess of other infectious diseases and was due to greater aggregation of the populace The greater the density of population in any area the greater the mortality from pneumonia Overcrowding in areas and in individual houses was the essential factor responsible for excessive incidence of the disease The remedy, therefore, was in the progress of housing and town-planning schemes In the meantime every additional open space provided in a town and every overcrowded area dealt with would, of a certainty, tend to reduce mortality from pneumonia.

Dr G Clark Trotter considered that the care taken of children had more to do in protecting them from pneumonia than the weather had to do with causing it

Dr Major Greenwood said that there was forthcoming a paper on pneumonia in London which seemed to show that overcrowding was more likely to be the cause of pneumonia in children, and weather the cause of pneumonia in the aged.

Sir William Hamer pointed out that such a disease was not likely to be due to a single cause, adding he had been impressed by the suggestion that pneumonia was often preceded by a cold.

Further discussion followed.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

A meeting of this Section was held on March 18th, Dr R J Rowlette (in the absence of the President) in the chair

Dr A R J Dungan read a paper on the rôle of the

Acetone Bodies in Diabetic Coma.

After a brief review of the literature, showing that the actual part played by the acetone bodies in producing the symptoms of diabetic coma was unsettled, Dr Dungan described experiments demonstrating that dogs and cats could be free from symptoms while having in their blood concentrations of acetoacetic and β-hydroxybutyric acids greater than those commonly found in human diabetic coma From this it was concluded that neither of these acids was likely to exercise a direct toxic effect on this condition The experiments, however, also showed that with the former acid, and probably also with the latter, when sufficient had been administered to a dog the result was a curious delayed intoxication leading to prostration and death. The animals commonly died at a time when acetone bodies had almost disappeared from the blood, and one of the features of the intoxication was a resistance to the action of insulin, such as occurred in human diabetic coma Dr Dungan suggested that this latter condition might possibly represent a similar indirect intoxication with one or both of these acids He described further experiments with acetone, showing that its effects were totally different from those of acetoacetic acid

Dr H. F Moore referred to the detailed and prolonged observations of which Dr Dungan's paper was the fruit

Dr A R Parsons asked if there was any danger of producing hypoglycæmia in a case of diabetes by pressing insulin when the urine was full of acetone and diacetic acid but there was only a very slight amount of sugar present

Dr H R Micks referred to the resistance to insulin which was sometimes met with, apart from ketosis, and asked what caused this resistance He mentioned a case recently reported, in which insulin had done very little towards lowering the blood-sugar, and said that it looked as if there was something else in the body, not a ketone, in diabetic cases which interfered with the action of insulin

Dr. E T Freeman asked if the effect of the ketone bodies in dogs in the advanced stage of diabetes was at all comparable with what it was in human beings, and if ketone bodies formed as rapidly in dogs as they did in human beings

Dr Dungan, in reply, said that cases of diabetic coma had been rather rare in the hospital in which he had worked in America. When they did occur the patients were given massive doses of insulin, and ketosis disappeared almost immediately Large doses of insulin should not, in his opinion, be given to a patient who had acetonuria, but was not in definite coma He did not know what caused the resistance to insulin in some patients, unless it was gross pancreatitis or carcinoma

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH

At a meeting on March 15th Dr L H Bryson described a series of cases of herpes zoster which had come under his observation during the past seven years In contrast to Head's record of age incidence he had found the disease more frequent in patients over 25 He had discovered no epidemicity nor any relation to chicken-pox Pain was usually a marked symptom, and increased in severity with the age of the patient The pain might be referred to a position apart from the rash In one of his cases there was at first severe pain on the radial side of the left forearm, accompanied with hyperæsthesia, whilst the rash appeared on the chest over the distribution of second and third dorsal nerves The definite cutaneous and nervous lesions of herpes zoster, with their associated sensation, provided peculiar opportunities for the study of symptomatology If the symptoms of herpes zoster could be accounted for, they would throw light on all symptoms Dr Bryson pointed out that all afferent pathways were the afferent tracts of reflexes having some other end-result than sensation, that sensation was the concomitant of a reflex, and that the reflex involved in the nerve lesion was probably a cutaneous capillary reflex The skin lesion occurred over papillæ where the capillaries were most numerous Considering the nature of the lesion, it was curious that tactile sensation was not interrupted. Anæsthesia was not a symptom, whilst hyperæsthesia was usual He suggested that pain arose on the same reflex to which the thermal sensations were concomitant, in all likelihood a vascular one. Hyperalgesia was due to an interaction occurring in the neopallium between the impulses of normal tactile sensation and those arriving from the site of a lesion, not, as had hitherto been represented, occurring in the cord.

Reviews and Notices of Books.

EXOPHTHALMIC GOITRE

By John Eason, M.D., F.R.C.P. Edin., Physician to the Edinburgh Royal Infirmary. Edinburgh: Oliver and Boyd. 1927. Pp. 215. 12s. 6d.

This is a notable addition to the literature of thyroid disease, being a broad survey in which recent additions to our knowledge have received critical attention. It will be welcomed by all who are interested in clinical medicine.

The volume is divided into two parts, of which the first deals with anatomical and physiological considerations and with the clinical examination of the thyroid gland. Part 2 is devoted to the clinical features of the diseases which are now classified under the title of exophthalmic goitre, and to their pathology, pathogenesis, diagnosis, and treatment. As the author points out, ætiological and pathological considerations now show that the Graves's disease syndrome is a unity only in the same sense as is Addison's syndrome. In each case various causes and *various pathological processes are associated with a* well-defined clinical picture, the essential pathological change affecting the thyroid in one and the adrenals in the other. Just as syphilis, tubercle, atrophy, or malignant disease may each give rise to Addison's syndrome by restricting adrenal function, so also Graves's disease is the result of the action of a variety of causes which stimulate thyroid function. These factors all receive full consideration, and since the modern views are mostly set out in addition to those formerly held, the reader is able to consolidate his knowledge.

Sections of the book which require special mention include the chapter on pathology, in which the changes in the thyroid are fully discussed, both in terms of the terminology now in general use, and also from the point of view held by Scott Williamson and I. H. Pearce. Again, the clinical features are probably described more fully and completely here than in any other book dealing with the thyroid gland. Especially valuable are the sections devoted to the alterations in the heart and circulatory systems and particularly the blood pressure. The value of a knowledge of the pulse pressure in estimating the severity of the disease is emphasised. Other modern methods useful in the diagnosis of this condition are discussed, notably the estimation of the basal metabolic rate; this test is of considerable value in following the effects of various methods of treatment, but the author points out that when it is not available, observations of the pulse pressure are equally useful, and a number of cases are quoted to illustrate this point. In the chapter on treatment the reintroduction of iodine therapy is fully considered and the indications for its use and methods of administration are described in detail. The administration of insulin and glucose is also recommended in certain cases, and it is interesting to learn that the author considers this method of treatment to have a definite if restricted value in the treatment of Graves's disease.

PHYSIOLOGY

Principles of Human Physiology. Fourth edition. By Ernest H. Starling, C.M.G., F.R.S., M.D., Sc.D., F.R.C.P., Foulerton Professor of the Royal Society. London: J. and A. Churchill. 1926. Pp. 1074. 25s.

Starling's Principles of Human Physiology needs no introduction to our readers. The fourth edition embodies the result of all those researches which have appeared during the past five years which are of fundamental importance. We note an account of E. C. C. Baly's work on the photosynthesis of hexoses, a new section on Neutrality and Reaction with descriptions of the methods of measurement of hydrogen-ion concentration. The work of A. V. Hill and his pupils on the relation between work done during muscular contraction and the speed of muscle shortening, is summarised, also that of A. V. Hill and Meyerhof on the time relations, quantitative analysis, and interpretation of the heat production during and immediately following muscular contraction. Several pages are devoted to the highly important and interesting researches of Pavlov and his school on the formation, types, and properties of conditioned reflexes. The section on the vitamins has been enlarged, and that on carbohydrate metabolism extensively altered to include a description of the isolation and preparation of insulin, and the mechanism of its action in both the normal and diabetic animal. Further additions include an account of the work of Bolton on duodenal regurgitation during gastric digestion, of C. Mann on hæmolytic jaundice, of J. Barcroft on the function of the spleen as a reservoir for red blood corpuscles, and of J. B. Collip on the parathyroid hormone. The changes in the sections on the coronary circulation, cardiovascular reflexes, and on the mechanism of urinary secretion have been occasioned almost entirely as the result of researches in the laboratories of the author. In spite of these many additions and alterations the bulk of the book has been reduced. This has been made possible by the omission of much that belonged strictly to the sciences of chemistry and anatomy, and is extensively covered in the text-books dealing with these subjects.

The vast field of knowledge which modern physiology requires is admirably covered with a lucidity of expression which commands interest throughout the pages of this volume.

Neuere Ergebnisse der Physiologie. Von Dr. Phil. et Med. Ernst Gellhorn. Leipzig: F. C. W. Vogel. 1926. Pp. 447. M.30.

This volume has been compiled by the author on a background of 22 lectures on various physiological subjects, the choice of subject being determined by the degree to which recent investigation has advanced knowledge therein. Especial attention is paid to those branches of research which have yielded results immediately applicable to the interpretation of pathological states in man.

The book is thus suitable for the advanced student of physiology, and for those medical practitioners who desire to become acquainted with the results of recent researches. The first four chapters are devoted to the more modern conceptions of such physico-chemical phenomena as osmosis, adsorption, membrane permeability, and electrical changes in living tissue in so far as they are of present significance in the interpretation of biological phenomena. These chapters also form a valuable introduction to the work, described in the later sections of the book, in which an attempt is made to interpret the more complicated reactions of individual organs in terms of the more simple dogmas of physics and chemistry. The work of J. Barcroft on the spleen, of O. Loewi on the liberation of substances having an inhibiting or accelerating action on the heart, and of A. Krogh, U. Ebbecke, and H. H. Dale and Richards on the capillaries, is clearly outlined. In connexion with this last subject, the author appears to have overlooked the fundamentally important work of Lewis and his collaborators on the reactions of the capillaries of the human skin. Further chapters deal with the results of recent work on the vitamins, the glands of internal secretion, and on the kidney. The work of A. V. Hill, O. Meyerhof, and G. Embden on the physical and chemical processes underlying muscular contraction is set out in considerable detail in two valuable chapters. There follows an account of recent advances in our knowledge of the physiology of the central nervous system, including a valuable account of R. Magnus's work, and the volume is brought to an end by three chapters dealing with the physiology of the sense organs.

The volume forms a useful survey of the recent work done in the particular branches of physiology with which it deals. Its bulk could have been considerably reduced had some of the papers referred to been examined more critically, and had the interpretations placed by authors upon the results of their experiments been less readily accepted. However, to winnow the chaff from the wheat of scientific literature is a time-consuming and wearisome task, and the fact that references to current literature are, if anything, too extensive, will not be resented by readers who wish to keep up to date without having to study original articles. The printing, paper, and illustrations are excellent.

EARLY DIAGNOSIS OF THE ACUTE ABDOMEN.

Fourth edition. By ZACHARY COPE, F.R.C.S. Eng., M.S. Lond., M.D., B.A., Senior Surgeon to Out-Patients, St. Mary's Hospital, Paddington. London: Oxford University Press. 1927. Pp. 237. 10s. 6d.

THE fact that this little volume has reached its fourth edition is evidence that it must have filled a want. The author has succeeded in reducing the problems of the acute abdomen to their simplest forms, and in explaining with remarkable lucidity the means at our disposal for their diagnosis. The volume is illustrated throughout with diagrammatic drawings which enable the eye to grasp their meaning at a glance. Any surgeon may peruse the volume with pleasure and will be sure to get fresh light on many points.

To the general practitioner who is called upon to deal with the acute abdomen this account should prove of the utmost value.

PROCTOLOGY.

Traité d'Endoscopie, Rectoscopie, Sigmoidoscopie. Second edition. By R. BENSAUDE, Medecin de l'Hôpital Saint-Antoine, Paris. Paris: Masson et Cie. 1926. Pp. 180. Fr.100.

THIS edition is in every way a great advance on the former one published in 1919. Interest will centre chiefly round the coloured illustrations, by Mr. Frantz, of proctoscopy and sigmoidoscopy. These illustrations, numbering 84, show both the normal and pathological conditions, and for clearness of detail and accuracy of colouring they are unsurpassed; the average level of excellence is high, but the illustrations of hypertrophied anal papillæ and tumours are exceptionally fine. The coloured plates are now interspersed with the text instead of being collected at the end of the book and are described in six languages.

The text has been largely rewritten and several new chapters have been added. The large number of black-and-white illustrations include a series of drawings of microscopical preparations. In the section on cancer the author describes the invasion of the rectum by cancers arising in the ovaries and uterus, but there is no mention, either in this chapter or in that on benign tumours, of adenomyoma of the uterus involving the rectum. Perhaps in the next edition the author will have something to say regarding this interesting and difficult condition. In the chapter on strictures of the rectum and colon there is no mention of diverticulitis. One would have liked to learn what the author considers characteristic of the view per sigmoidoscope of the lower end of a stenosing diverticulitis, and whether endoscopy affords any means of distinguishing this from a constricting carcinoma. Is œdema of the mucous membrane below the stricture more marked with diverticulitis than with carcinoma?

The final chapter on treatment describes zinc ionisation, the injection treatment for piles, and the application of radium in inoperable cancer of the rectum. The author advocates the use of diathermy for the removal of benign tumours, and illustrates an ingenious modification of the usual crocodile forceps and snare for use through the sigmoidoscope; the shafts of the instruments are insulated and allow diathermy to be applied through the jaws of the forceps or the wire snare. This would appear to permit of a very radical and efficient method of removing simple tumours, and is one which should be generally adopted in this country. A bibliography is appended at the end of the work.

THE CHARAKA CLUB.

Proceedings of The Charaka Club. Vol. VI. New York: Paul B. Hoeber. 1925. Pp. 145. $4.

THE Charaka Club, named after a Hindoo physician, called the Hippocrates of India, was organised in 1898 by a group of New York physicians who sought recreation and stimulation through excursions into literary, historical, and artistic fields. The sixth volume of the proceedings of this club opens with a delightful paper by Dr. G. H. Walton, who discusses the ever-present question of "Why other people and things annoy me so much," though it is not everyone who will have the courage to say in print as does Dr. Walton, "I wonder what it is I do that annoys everybody else?" Dr. Charles L. Dana contributes a little paper upon Dr. John Ursinus, a French medical man, who in 1541 published a work dealing with the medicinal properties of certain animals, and Dr. Dana credits him with being the originator of opotherapy. But remedies taken from animals were dealt with long before Ursinus's time by Pliny the Elder, in whose natural history will be found a number of astonishing prescriptions. An interesting paper is that by the late Dr. A. G. Gerster (the subject of an appreciation on p. 37 by Dr. Sachs) entitled, "A Letter on the Theory of Music." The paper does not say much about the theory, but it gives excellent advice as to how to appreciate music properly; Dr. Gerster evidently had a whole-hearted admiration for Bach, though curiously enough he makes no mention of his organ music. Dr. F. S. Meara supplies an admirable article upon that artistic printer, John Baskerville, whose editions of the Prayer Book and many of the Latin classics are well known. The first book to issue from the Baskerville Press was the Royal Quarto Virgil, published in 1757. There is a trap connected with this work which Dr. Meara does not mention, but all book lovers should know. An edition was reprinted in 1771 with the original date (1757) on the title page. The real 1757 edition may be known by the heading to the tenth book which reads Liber decimus Aeneidos, while the 1771 reprint has Aeneidos Liber decimus. Among the subscribers to the 1757 edition were John Fothergill, — Heberden, M.D.—i.e., William Heberden the elder, John Ash, M.D., Birmingham, who took two copies and was the first physician to the General Hospital at Birmingham, and sundry other medical men not so famous, such as — Akinside, M.D., who may, however, be Mark Akenside the poet physician. Among non-medical names those of Sam Johnson, A.M., Benjamin Franklin, Esq., F.R.S., of Philadelphia, and Thomas Gray, A.M., of Pembroke Hall, Cambridge, are notable.

MICROSCOPICAL ANATOMY OF THE IRIS.

By M. WOLFRUM, Professor at Leipzig. Berlin: Julius Springer. 1926. Pp. 218. M.16.50.

THIS is a section of the third chapter of the second edition of the Graefe-Saemisch Handbuch der Gesamten Augenheilkunde, a colossal work only to be compared in size and scope to the American Encyclopædia of Ophthalmology. As in that work, the sections are divided between a large number of collaborators. This volume is a considerable treatise dealing with the anatomy of the human iris, with several references to the anatomy of the iris in animals, especially apes.

There are still points concerning the *minute* anatomical structure of the iris that cannot be considered as settled. Fuchs describes the anterior surface of the iris as bounded by an endothelium, and Koeppe, from observations with the slit lamp, supports this. Wolfrum throws doubt on it, preferring to regard the so-called endothelial cells as merely flattened cells of the iris stroma Koeppe describes a lymphatic system under the so-called endothelium, which Wolfrum prefers to regard as merely the anastomosis of processes from the stroma cells With regard to the vascular system, Wolfrum finds that there is no true circulus arteriosus minor, the vessels usually described by this name being, in fact, mostly obliterated and derived from the fœtal pupillary membrane, microscopical remains of which, he tells us, are present in 45 per cent of normal cases as seen under high magnification. We do not gather his views on the circulus arteriosus major, which Thomson Henderson believes to be not actually arterial at all, but venous, looking upon all the vessels that perforate the sclera in the ciliary region as veins, contrary to the generally accepted teaching (Trans- Oph Soc, 1908, p 167) This is surely a point that ought to be cleared up in an authoritative work. With regard to the disputed existence of a dilator muscle of the iris, the modern view that the fibres adjacent to the posterior layers of the iris are really a dilator muscle is supported and may be considered proved. Some authorities have maintained that the cells of the stroma take part in the active dilatation of the pupil, but the conclusion of Wolfrum is that they do not, at any rate, in man With regard to pigmentation the physiologically important pigment cells exist almost exclusively in the posterior epithelial layer of the iris The pigment cells of the iris stroma, to which the colour of the eye is mainly due, are not normally present at birth in the white races, and when once laid down do not alter through life except as the result of degenerative or senile changes. The histological structure of the iris is of considerable interest in connexion with its relatively enormous capacity of contraction and dilatation, and with the alleged absorption through the crypts of its anterior surface and the circulation of the ocular fluid; but the physiological problems arising from this latter function, if it exists, are not discussed by Prof Wolfrum His contribution is valuable chiefly as a work of reference to the microscopical structure of the iris; the figures, especially some of cells under high magnification, are extraordinarily clear

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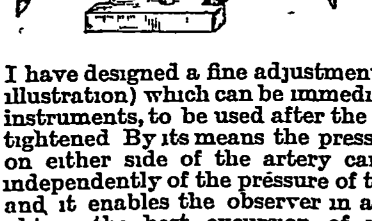
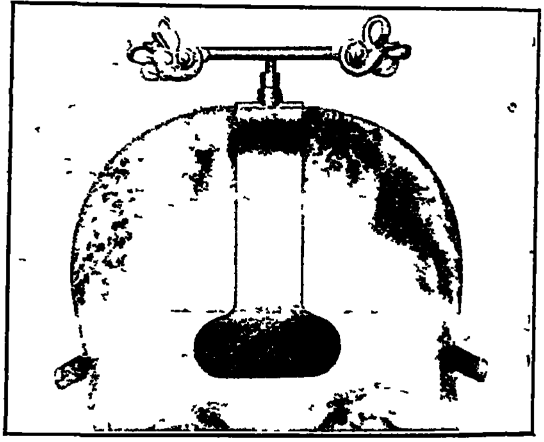


The special screw may be obtained from Messrs Arnold and Sons (John Bell and Croyden, Ltd), 50–52, Wigmore-street, W.1.

EDGAR F. CYRIAX, M D Edin.

MODELS OF THE LABYRINTH

MODELS of the labyrinth (King's College Hospital pattern), a specimen of which is shown in the illustration, have been made for purposes of investigating labyrinthine diseases and for teaching students. They are double natural size, and are made of Wood's fusible metal, which is sufficiently strong for ordinary purposes, the ampullary ends are painted in different colours in order to show them up It is not difficult to make reproductions of the semicircular canals and cochlea from one petrous bone, and it is also easy to make models of the labyrinth if accuracy is not desired But the intention of the present writers has been to produce a model which would be properly orientated As previously described in the Proceedings of the Royal Society of Medicine, the method used was to fix a hollow tube between the internal auditory meatus of a dry skull, and to hold this hollow tube in place by means of a rigid frame, which had bars clamped on to the side of the skull in such a way that the lower edge of each bar coincided with the Frankfort plane—that is to say, the upper margin of the bony external auditory meatus and the lowest point of the orbit. Metal was run through the foramen ovale of one side to fill the cochlea and semicircular canals of that side, and to pass across the hollow tube to the opposite labyrinth which was also filled, the hollow tube being rigidly held in place by cement The next step was to remove the bone and to extract the complete model in one piece The casting presented considerable technical difficulties, which were overcome by Mr. Shaw, who produced an intact model at the Royal Dental Hospital Enlargements were then made to double size, not by a modelling machine as had been hoped, but by free-hand work The models were made in silver by Mr Thomas, seal engraver and medallist, who exercised extreme care in getting details accurate Having secured the enlarged model, it was then necessary to arrange for reproduction in mass. This work was done successfully by Messrs Gerrard, furriers and naturalists, who made piece moulds and cast the two labyrinths together in Wood's metal The original frame was made by Messrs Mayer and Phelps, and they have made head frames with a pointer to lie parallel with the Frankfort plane in such a way that when the frame is on the head the labyrinth lies in correct orientation in all respects The patient's head can then be put into any position and the exact relations of each of the canals are seen, rotation and caloric tests can be carried out with the frame in position It must be remembered that there may be slight variations in the inclination of the canals in individual skulls



The whole apparatus of enlarged models and head frame can be obtained from Messrs Mayer and Phelps, 59, New Cavendish-street, London, W. 1

A H. CHEATLE, C.B E, F R C S Eng.
V E NEGUS, M S, F R C S Eng.

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[See also pp. 20 & 29.

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THE LANCET.

LONDON. SATURDAY, APRIL 2, 1927.

SURGERY OF THE SPINAL CORD

We publish in our present issue two communications which demonstrate the remarkable difference in purpose and technique between operations performed in the same topographical area Prof. Oppel, by the skilful removal of a mechanical obstruction in the spinal column, enabled an injured patient to obtain normal movement of the head; while Mr Donald Armour, in his last Lettsomian lecture, concludes a review in which operation on the spinal column is considered mainly as a means of access to lesions of the spinal cord The surgery of the spinal cord and its membranes, with which Mr Armour deals so lucidly, necessarily dates its birth in this its modern form from the rise of aseptic method, but its origins are lost in unmeasured antiquity, and we owe a deep homage to those who laboured so hard to form it in the womb of time Four hundred years ago Ambroise Paré was urging surgeons to operate for the relief of compression of the spinal cord, but 2000 years had then gone by since Hippocrates had discussed the reduction of spinal dislocations and described with unerring accuracy the mechanism of compression in Pott's disease and its independence of angulation Yet so far as is known Cline in 1814 was the first deliberately to remove a depressed vertebral arch, thereby arousing a storm of controversy in the course of which Charles Bell denounced such surgery in no measured terms, whilst Astley Cooper frankly described its opponents as blockheads It is pleasant to think that if the daring of an Englishman aroused the controversy it was the skill of a Scotsman which laid it In 1883 William Macewen operated upon a case of complete paraplegia due to Pott's disease with brilliant success, following this up with equal success in a similar case due to a fracture-dislocation In 1887 the diagnostic skill of Gowers and the manipulative dexterity of Horsley combined in the successful removal of a tumour compressing the fourth dorsal segment of the cord and opened up a new epoch in neurological surgery Methods of access to the cord having now become a matter of established surgical routine, recent effort has been directed to greater accuracy in the diagnosis and localisation of organic lesions of the cord It is known that very slight injury to the arachnoid will lead to the development of adhesions in the subarachnoid space and to a block more or less complete in the circulation of the cerebro spinal fluid The diagnosis of a spinal lesion thus resolves itself into two questions: first, the evidence of a block, secondly, its precise localisation

A block in the cerebro spinal circulation leads to the stagnation of the fluid below it and to the congestion of the meninges, with the very remarkable result that the composition of the fluid is entirely changed Instead of a minute trace of protein it may now contain as much as 2 per cent, whilst in addition it may absorb from the congested vessels altered blood and fibrinogen Thus an increase in the amount of protein, the presence of a yellow pigment, and occasionally spontaneous clotting will establish beyond doubt the presence of an organic block, and this invaluable information may be gained with no greater risk or inconvenience than is involved in a lumbar puncture By the introduction of lipiodol into the spinal theca it is possible in a large number of instances to give visual demonstration on an X ray film of the site of the obstruction. There are, however, considerable difficulties in the interpretation of the results, there are many possible fallacies, and there is undoubtedly some reason in a hesitation to introduce into immediate contact with the spinal cord a foreign substance which remains unabsorbed for a very long period Moreover, modern methods of neurological analysis enable an accurate localisation to be made by purely clinical methods in 98 per cent of the cases, so that there is no real necessity in general for such artificial aids In exceptional cases, however, where the existence of a block has been established, lipiodol does furnish a definite aid in its localisation

The relief of intractable pain is one of the most serious problems of medicine, and towards its solution by surgical means an immense amount of laborious research has been devoted in recent years The splendid work of O Förster on division of the posterior roots has fully justified the association of that operation with his name, but it is of interest to notice that the operation was carried out for the first time by W H Bennett in 1888 In the relief of pain where nerves are involved in malignant growth or in scar tissue the operation has met with great success, but its application to the severe lightning pains of tabes has been disappointing More subtle and more daring is the surgical division of the anterolateral tract of the spinal cord, proposed by W G Spiller, and first carried out by E Martin in America There is in surgery no more elegant application of fine anatomical detail to the treatment of disease The operation itself is of the most delicate order, and its results have been on the whole very successful In 1915 H S Souttar at the West London Hospital applied the method to the relief of gastric crises of great severity in tabes, with immediate and permanent success The operation has since been performed extensively by C H Frazier, M M Peet, and other surgeons, who have fully established the soundness of the procedure

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REFLECTIONS ON THE HUME-SPRY CASE

Entirely favourable though it was, the verdict for the defendants in the Hume-Spry case cannot compensate them for the annoyance and anxiety of 15 days actual litigation, for the many weeks of preparing to resist the allegations now shown to have been without foundation, and for the prolonged interruption of their daily work Nor can judgment with costs repay them the expense of the proceedings So long as the discharge of professional responsibilities under the Lunacy Act can thus be rewarded with a heavy loss in time and money, the present state of the law cannot be regarded with equanimity The Royal Commission on Lunacy, in the report issued last July, recommended that a plaintiff should be obliged to discharge the onus of proving bad faith or negligence on the part of the certifying doctor instead of the burden being placed—as at present, in spite of the apparent intention of Section 330 of the Lunacy Act, it sometimes seems to be—upon the doctor to prove positively his own good faith and reasonable care This is no great change, but, for what it is worth, it should be made at once with the addition of all possible safeguards for the medical profession against the indiscriminate institution of civil proceedings It will doubtless be said that the Parliamentary time-table will not allow the introduction of fresh legislation, but there is no reason why a draft Bill should not be prepared and circulated forthwith. While any such legislation is under consideration, the principle of the Public Authorities Protection Act must be strengthened rather than weakened; for a busy medical practitioner is at a serious disadvantage if suddenly called upon to meet allegations about a patient whom he has certified many months before, and it is unfair to prejudice his defence by challenging his recollection upon details which he has had time to forget It must be borne in mind, too, that the machinery of reception orders imposes upon the medical profession duties of an exceptional kind

The evidence of lunacy given by a medical certificate that a person is of unsound mind and requires detention under care and treatment resembles the evidence in no other kind of judicial proceedings. If the matter were conducted in the normal judicial fashion, three rules would apply which the nature of the proceedings excludes First, the person whose mental condition is being investigated would be entitled to have a categorical statement of the matters alleged to impeach his sanity and he would be entitled to make a specific reply, secondly, all hearsay statements would be shut out; and, thirdly, the proceedings would take place in public A fourth rule might then follow—namely, that the doctor upon whose evidence the judicial authority's decision will depend would be entitled to complete privilege and would be protected from legal consequences like any other expert witness before any other judicial tribunal. The contents of the medical certificate are understood to be privileged in the sense that a libel action cannot be founded upon them, but the extent of the privilege should not thus be limited. In no other form of judicial inquiry are expert witnesses liable to be held legally responsible if a party afterwards objects to the consequences of the tribunal's decision The public probably does not realise that the medical certificates are by no means automatic in the obtaining of a reception order. The Lunacy Act requires that the certificates shall be considered by a judicial authority who for this purpose has all his normal jurisdiction to administer oaths and summon witnesses The judicial authority has a statutory duty to consider the evidence, to decide whether he shall personally see and examine the alleged lunatic or not, and to satisfy himself whether a reception order may be made forthwith or whether further inquiry is necessary If he makes the order, the alleged lunatic has afterwards all the safeguards furnished by periodical examination and by the enlightened administrative measures of the Board of Control. In the debate on lunacy recently initiated by Earl RUSSELL in the House of Lords, good reason was given for believing that the supervision of the Board of Control (composed of expert medical and legal members) is a more valuable check upon the certifying doctors' certificates than is the inquiry conducted by the judicial authority before the order is signed. It may be so, but while the judicial authority is retained for the purpose of examining the evidence and of signing the reception order if satisfied by the evidence, the decision of the judicial authority should be final unless it is overruled on appeal, in any event it should not be legally possible to go behind the judicial decision and attack the witnesses unless the latter have been guilty of perjury, subornation, or criminal conspiracy.

Meanwhile, since he is unprotected, the doctor who signs a certificate must take care not to expose himself to attack He would be well advised to make a preliminary draft of the statement of facts upon which his opinion is formed, and to go through it in the light of possible cross-examination in a court of law in future years He should pigeon-hole any notes he has made of the case, and he should be more careful than ever to study the marginal instructions upon the certificate form, and to remember that the Act requires him to distinguish between facts observed by himself and facts communicated by others, Parliament having forbidden a reception order to be made upon a certificate founded only upon facts communicated by others He will not need to be reminded that he will encounter prejudice on the part of persons who suspect that doctors exist to obstruct the liberty of the individual and to segregate in strict confinement all potential Shakespeares, Isaac Newtons, and Beethovens He will find others who hold the primitive belief that to treat a lunatic is an interference with an all-wise Providence Finally, he may find that his worst troubles come from within his own profession Cynical laymen have been heard to remark that, however high the reputation of a medical practitioner, however long his experience and however great his care, some ingenious member of the same calling can always be found to come into court and accuse him of negligence In the HUME SPRY case, the cynics have observed, an expert witness was called for the plaintiff who, seeing Mr HUME-SPRY apparently for the first time in December, 1925 (more than two and a half years after the date of his certification) was prepared to state with confidence in the witness-box that he could find no evidence of the plaintiff being now, or having ever been, insane, that he was not insane at the time when he was certified, and that he should never have been certified. Unquestionably if one medical practitioner thinks that another has improperly led a magistrate to confine a sane man in a lunatic asylum, he must say so when asked in a court of law, truth must not be sacrificed to professional esprit de corps But the jury doubtless remembered the old proverb that an ounce of fact is worth a ton of theory, it was the facts which were fatal to the plaintiff's claim

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HEART DISEASE AND PREGNANCY

DIFFICULT decisions often have to be made when a woman with heart disease becomes pregnant, and a recent discussion[1] between physicians and obstetricians at Birmingham serves to show what differences of opinion obscure current teaching There are plenty of opportunities for making mistakes, for even in its more advanced stages heart disease seems to have little inhibitory effect on conception, and troublesome cases—each with its own special problem—are constantly being encountered

Every variety and combination of cardiac lesion may be seen in pregnant women, the commonest being *mitral stenosis, but it is not so much the site as* the extent of the damage and the degree of compensation established which are important, though some lesions imply, of course, a worse prognosis than others There is little evidence of myocardial hypertrophy during normal pregnancy, but there is no doubt that extra work has to be done, and the cardiac output is said to be increased by as much as one-third during the month or two before term This throws extra work on the muscle, the damaged heart is liable to fail, and a certain number of women with advanced heart disease and poor compensation are inevitably destroyed by the strain either of pregnancy or labour. On the other hand, it must be remembered that by no means all the severe cases end like this, and where a lesion is slight and more or less stationary the patient may pass through several pregnancies without obvious ill effect Cases in the intermediate group are those which call for the most careful consideration, for a wrong or a delayed decision may easily have fatal results Hearts in which the damage is of moderate severity often pass through the early months of pregnancy without serious distress, but during the last month or two they show considerable loss of compensation and this means a definite risk of failure, either before or during labour Many of the patients make the efforts of parturition without any great difficulty, and although there is some danger that the heart may fail during the early part of the puerperium, the degree of compensation generally improves Whilst opinion is divided as to whether permanent damage is done to the heart by the added strain of pregnancy, most authorities believe that some of the damage is permanent, and in the majority of households, of course, the care of a new child throws an extra burden on the mother

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[1] Meeting of the Midland Obstetrical and Gynæcological Society at the Medical Institute, Birmingham, on Feb 8th.

Naturally enough, there is no one line of treatment that is suited to all cases, but some general therapeutic principles are becoming established Any woman who has had failure of compensation apart from pregnancy, or in previous pregnancy, should not be allowed to go to term In these women conception ought to be prevented, but if it should occur, abortion should be induced as early as possible Most operators prefer to use some simple method, and at the Birmingham meeting Mr CHRISTOPHER MARTIN emphasised the ease with which pregnancy may be ended by introducing a solid rubber bougie The only disadvantage of this procedure is that it does not permit of sterilisation, and some obstetricians prefer to remove the uterus, even where the cardiac condition is dangerous In the less severe cases, in which failure of compensation only becomes apparent in the latter part of pregnancy two plans are available Rest in bed and careful medical treatment will often bring about some improvement, and the patient may be allowed to go to term and into labour naturally. The second stage should be shortened as much as possible by operative delivery to avoid the stress of the second stage pains Few now favour the induction of premature labour, as the patient is not saved an appreciable amount of work by this measure The alternative is to perform a Cæsarean section at term or a little before it Here, again the patient should be treated medically for a few weeks previously The operation can conveniently be performed under intrathecal stovaine anæsthesia, although experience shows that ether may be used with safety The great advantage of this method is that the patient can be sterilised at the same time, either by division of the Fallopian tubes or by hysterectomy; the former seems to be the better procedure under the circumstances There is at present a definite tendency to regard Cæsarean section as the correct method of dealing with the more severe cases of heart disease complicated by pregnancy, and on the whole results have been good In accepting this doctrine, however, it must not be forgotten that many lives have been lost owing to delay inspired by the hope of securing a viable child Abortion should be early if the woman is unlikely to get safely to the last month or so of pregnancy, and the cooperation of cardiologist and obstetrician should also be early if the patient is to have the best possible chance. Combined discussion serves a useful purpose, for the obstetrician sees a large number of cases in which no harm results from labour, whilst the physician is likely to be called only to such cases as are in extremis. An exchange of views can do nothing but good, the only danger is that it may be made to excuse a policy of vague anticipation

Annotations.

Ne quid nimis ”

THE LISTER CENTENARY

THE object of keeping centenaries is to focus attention on the comparatively recent past, and the celebrations are only useful if they prevent us from thinking our environment and methods inevitable. The birth of Lord Lister on April 5th, 1827, is being celebrated at Glasgow this week, and in London from April 4th to 6th. The ceremonies are taking many forms, but none of the contributions is likely to be more interesting than the personal reminiscences of those who worked under Lord Lister and knew conditions before he did his work A foretaste of these contributions is given by Sir Hector Cameron in a brief monograph[1] dealing with Lister's work in the wards of the Glasgow Royal Infirmary from 1860 to 1869 The position of surgery before that time was, as he shows, barely conceivable to the present generation "The ultimate fate of every man who had his body wounded, whether by accident or by surgical operation, was a matter of absolute uncertainty" When Lister was appointed to the Infirmary he was given charge of wards Nos 24 and 25 on the ground floor, in the new surgical block which had been opened in the previous year Pyæmia, erysipelas, and hospital gangrene were rife, notwithstanding the newness of the buildings, and about 1868 the mortality became so excessive in ward 23—which was in charge of a colleague—that it had to be closed The trouble was attributed to a foul drain, but it was found that some four feet away from the wards there was a multitude of coffins, containing the remains of those buried during the cholera epidemic of 1849. Yet, in Lister's own words "at the very time at which this shocking discovery was made, I was able to state , that during the previous nine months, in which the antiseptic system had been fairly in operation in my wards, not a single case of pyæmia, erysipelas, or hospital gangrene had occurred in them" The ward in which these marvellous results were obtained is a place which might well have been preserved as a memorial both of the worker and his work, but it has now been destroyed A second centenary contribution[2] sets out with admirable restraint the efforts to preserve it which were made by the Glasgow Lister Memorial Committee, and the reasons why these efforts failed In his introduction, Lord Blythswood points out that the book is published to dissipate any idea that the citizens of Glasgow as a whole were responsible for the demolition of the ward, "the responsibility for this act of vandalism lies at the door of a comparatively small majority of the total number of Managers constituting the Board of the Glasgow Royal Infirmary in the year 1923" The book consists of four sections together with appendices. The first and third are by Mr Ernest Maylard, B S, who contributes an appreciation of Lister and his work, and an account of the efforts for the preservation of the Lister ward The second, by Mr. James A. Morris, architect, gives an excellent account of the Infirmary buildings, whilst the fourth is by Mr L W G Malcolm, conservator of the Wellcome Historical Medical Museum, the authorities of which *have reconstructed a section of the original* ward, the interior furnishing and fitting being those which actually stood in it when Lister began his antiseptic practice

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[1] Reminiscences of Lister and of his Work in the Wards of the Glasgow Royal Infirmary 1860–1869 By Sir Hector Clare Cameron C B E, M D, C M, consulting surgeon Glasgow Royal Infirmary Glasgow Jackson, Wylie and Co 1927 Pp 45 1s

[2] Lister and the Lister Ward in the Royal Infirmary of Glasgow A Centenary Contribution Glasgow Jackson, Wylie and Co 1927 Pp 132 12s 6d

The programme of the celebrations in London makes it certain that there will be addresses here as appropriate as these two memorials from Glasgow Though the details have already been published in The Lancet, it is perhaps convenient to set them out again in full —

PROGRAMME OF CELEBRATIONS IN LONDON

Monday, April 4th

11 a m —Reception of Delegates by H M the King at Buckingham Palace

3 p m —King's College Hospital *Addresses on Lister's Personality by Sir Watson Cheyne, F R S, Sir Lenthal Cheatle, and others who served under Lord Lister All old students of the hospital and their friends are invited

8 30 p m —Royal Society of Medicine *Reception by Sir James Berry (the President) and Lady Berry at 1, Wimpole-street, W 1 (Admission by Ticket only Evening Dress) Address at 9 30 P M. by Sir StClair Thomson, entitled " The Centenary of Lister Recollections by one of his House Surgeons "

Tuesday, April 5th

11 30 a m —*Reception of Delegates by the Prime Minister, and Presentation of Addresses, in the Hall of the British Medical Association, Tavistock-square (Morning Dress Academic Dress) Short Discourses by Prof Henri Hartmann (Paris), and Prof Max Ritter von Gruber (Munich), dealing with the effect of Lister's work on surgical and pathological science and practice in their countries

4 p m —Royal College of Surgeons of England, Lincoln's Inn-fields *Conversazione (Morning Dress)

7 30 p m —Merchant Taylors' Company * Dinner at the Company's Hall, 30, Threadneedle-street, E C 4. (Evening Dress with Orders and Decorations)

Wednesday, April 6th

11 15 a m —Westminster Abbey *Memorial Service, with address by the Bishop of Birmingham (Rt Rev E W Barnes, F R S) (Morning Dress Academic Dress) Delegates will have an opportunity of placing wreaths at the Memorial Tablet to Lord Lister in Westminster Abbey

3 p m —*Discourses in the Robert Barnes Hall of the oyal Society of Medicine, Wimpole-street, W 1, by Sir harles Sherrington, O M , F R S , Prof W Bulloch, F R S , and Sir Berkeley Moynihan, P R C S , on Lister as Physiologist, Bacteriologist and Surgeon (Morning Dress)

9 p m —Royal Society *Conversazione at the Society's rooms in Burlington House (Evening Dress with Orders and Decorations)

Ladies will be admitted to the ceremonies marked *

THE HÆMOLYTIC AGENT IN ADDISONIAN ANÆMIA

It is now very generally agreed that achlorhydria is one of the few practically constant features in pernicious or Addisonian anæmia, and a large number *of observers believe that a similar gastric condition* occurs in subacute combined degeneration of the spinal cord An increasing body of opinion accepting this view ascribes the severe and progressive anæmia of both diseases to hæmolysis resulting from bacterial infection of the intestine, this infection being secondary to loss of the protection normally provided by the acid gastric juice Attempts to pass from this hypothesis to the actual demonstration of a specific hæmolytic agent present in the small intestine of such cases have so far failed It has been shown, with some constancy, that the duodenal contents are less uniformly sterile in cases of achylia gastrica, but the presence of hæmolytic streptococci, though reported in some cases, has been denied in others The whole subject is fully reviewed by Dr F A Knott in the current issue of *Guy's Hospital Reports* (lxxvii , 1, 1927) Working in conjunction with Dr J F Venables and Dr A F Hurst, this observer has been able to make extensive bacteriological observations on 37 cases of Addisonian anæmia In about 90 per cent of these he was able to demonstrate the presence in the intestine of hæmolytic strains of bacteria, but he is careful to point out that the infection was not necessarily from sources above the pylorus, and that in many cases the bacteriological strains were predominantly of the fæcal type, particularly *Bacillus coli hæmolyticus* and Gram-positive anaerobes It is not, as Dr. Knott remarks, necessary to postulate that one and only one organism can be responsible for the hæmolysis so prominent in this disease, and it is quite possible that achlorhydria, by permitting large numbers of living organisms to pass through the stomach into the duodenum, may promote a catarrhal state of the intestinal mucosa which facilitates not only its infection with all kinds of fæcal bacteria but also absorption of whatever toxins these organisms may produce. Dr Knott's personal opinion is that in all these cases invasion occurs both from above and below and that it is essentially the fæcal bacteria which produce the distant changes both in blood and nervous tissues, the relative incidence of damage on the two types of tissue being largely determined by the *predominant type of organism* The essay as a whole is evidence of the keenness with which research is being pursued into the causation of a most baffling and serious disease, and it is further typical of the high standard of work which characterises this and previous numbers of the *Guy's Hospital Reports*

VENTILATION

The so-called all-electric house, which is civilisation's latest attempt to save labour and secure comfort, has introduced problems of ventilation which have not yet been generally recognised In ordinary houses there are chimneys and flues which allow the escape of overheated and vitiated air, but the occupants of an all-electric house, unless special provision is made, must always be taking steps to keep the air fresh Though open windows are in fashion, the conditions and simpler tests for successful ventilation are not subjects of common information This bids fair to be changed by suitable instruction in schools The ideal is that air should be reasonably free from smoke, dust, microbes, and odour; it should not overheat nor chill the body, and it should be neither too dry nor too moist To make sure of all these conditions requires rather complicated tests, but it is quite easy for teachers and scholars to take readings from a dry-bulb thermometer every few hours and adjust their windows accordingly A recent book by Dr Thomas D. Wood and Miss E M Hendriksen,[1] shows that in many schools in the United States the keeping of records is part of the daily routine They describe two inexpensive systems of window-ventilation which have lately been found successful They are called respectively the Watt and the Wheeler system In the Watt system the windows are opened at the top, the blinds being placed lower down so that they do not blow about or interfere with the entrance of the air , in some cases the blinds are *in two halves, the top half to* pull up and the bottom half to pull down In the Wheeler system the air enters at the bottom of the window, but is deflected upwards In both systems the exhaust ducts leading away impure air are situated at some distance from the windows, and flags are placed at the openings to see that the current is passing in the right direction The size of the openings is regulated according to the temperature in the room, heat being supplied by radiators Such an arrangement is simple to work and only depends on the presence of a person with an elementary knowledge of ventilation Many expensive systems prove useless in practice for want of this knowledge, but it is easily acquired In Great Britain the optimum temperature indoors is about 60° F , in America it is nearer 64–68° because in winter the air there is drier than in England owing to the cold out of doors. If the air is dry a higher temperature is necessary for comfort. In this country the air in houses rarely becomes excessively dry, for the indoor relative humidity is usually between 40–60. In America, however, it may fall as low as 20, and special methods for moistening the air are being introduced. By valve attached to the radiator supply pipe steam may be passed into the room until the windows show moisture on the panes; this steaming may be carried out in schools both before and after the children occupy the class-rooms. In small houses in America it is advised that pans of water should be placed on each radiator so that at least half a gallon of water daily evaporates into a room of average size. In England, however, this problem hardly arises. When people complain of dryness of rooms, the real trouble is often a leak which permits the escape of fumes from radiators or gas or coal fires. In a house without chimneys it is particularly essential to see that a suitable exit is provided for the products of combustion, as was cogently pointed out in our columns not long ago by Dr. J. S. Owens (THE LANCET, March 5th, p. 514). Laying stress on the dangers of the portable flueless heater as used in living rooms and bedrooms, he laid down the principle that "the heating and ventilation of houses should be inseparable, and a method of heating which does not in itself produce a ventilating effect should be looked on with suspicion." At the present time it is doubtful whether this suspicion is sufficiently widespread.

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[1] Ventilation and Health By Thomas D Wood, A M M.D, Professor of Physical Education, Teachers' College, Columbia University, New York, and Ethel M Hendriksen London and New York D Appleton and Co 1927. Pp 210 5s

THROMBOSIS OF VEINS

IN his article on phlebitis of the lower limbs and abdominal wall, which we print on another page, Dr. W. Bain remarks on the scant attention paid to this not uncommon malady in most text-books of medicine, Allbutt's System being a notable exception.[1] Blood-clotting in vivo is a complex process which has been studiously investigated. There are two kinds of thrombi—the coagulative and the agglutinative. The latter are due to agglutination of the red cells and are quite different from those due to coagulation. They are found chiefly in the capillaries, but may occur in veins, and are encountered in infective diseases, such as enteric and pneumonia, and may account for the transient congestions of influenza. The substances that produce coagulation of the blood are fibrinogen, thrombin, and calcium salts. The two theories regarding the method of production agree in this, that fibrin is derived from fibrinogen. The points in dispute are in regard to the origin of thrombin and the mode of action of the calcium ions and the thromboplastic substances. According to P. O. Morawitz,[2] the thrombin exists in living blood in an inactive state called prothrombin, which becomes converted into thrombin by the simultaneous action on it of soluble calcium salts, and of a thromboplastic substance furnished by the tissue cells in general and by the cellular elements of the blood-platelets and leucocytes. This substance acts, therefore, as a kinase and is called thrombokinase. The fundamental fact of this theory is that kinase is necessary for the union of calcium with prothrombin, but W. H. Howell[3] declares that prothrombin may be converted into thrombin by the action of calcium alone. Prothrombin is probably derived from the blood-platelets or from the leucocytes and thrombokinase is produced either by the blood-platelets, leucocytes, the vessel wall, or from the tissues. According to Mellanby, the testis is a suitable source to obtain it for experimental purposes. Loucks[4] believes that thrombin loses its activity when deprived of calcium salts, and that active thrombin cannot be prepared from calcium-free serum or fibrin. G. H. Whipple[5] regards the delay in clotting of the blood in diseases of the liver with jaundice as due to an excess of antithrombin in the blood, but Howell suggests that the prothrombin may be rendered inactive by an excess of heparin. Heparin, which is derived from the liver and other organs, acts by neutralising prothrombin and so preventing coagulation. Cephalin is antagonistic to heparin and antithrombin. Such in brief is the present view of the mechanism of clotting. In the living body a thrombus begins by the deposition on the wall of the vein of a minute pearly translucent mass of blood-platelets. The platelets are clustered together forming an irregular sticky substance, catching the passing leucocytes, and they, and perhaps the platelets, appear to liberate thromboplastic material so that filaments of fibrin spread out and entangle numbers of red cells. The thrombus tends to grow by accretion, so that parts of it show differences in colour. The clinical bearing of these facts is the subject of Dr. Bain's observations.

DRUG-TAKING IN SOUTH AMERICA

THE war is held responsible for the increase in drug-taking during the last 10 years even in countries that remained neutral. The increase was indeed noticeable before 1914, but that it received a great impetus from the abnormal psychological conditions engendered by the war, even in remote countries such as the Argentine, is argued by Dr. Gregorio Bermann,[6] professor of medicine in Cordoba. He states that in Cordoba, a town of 200,000 inhabitants, as also in Buenos Aires, the evil is rampant and widespread among the upper classes. It has become a fashionable vice, widely diffused by the "patotas" or social clubs, which has been calculated to affect in these towns two and a half to three per thousand of the population. The effect of severe legislation was, in Cordoba at least, largely rendered nugatory by the high position of the offenders whose relations used their influence on the judiciary to avoid scandals. Nevertheless, in Dr. Bermann's opinion, there has recently been a considerable diminution; the open trafficking and solicitation no longer exists, though still prevalent enough in the under-world of prostitution and debauchery where this vice finds its natural habitat. As to whether the individual affected is to be regarded as a criminal or an invalid, Dr. Bermann takes up a rational position midway between the two extremes; he is wholly opposed to the elimination of moral responsibility in these cases, whilst admitting that the confirmed drug-taker has to be treated as a sick person. He discusses at length the origin, associations, symptoms (physical and moral), and the consequences of the various drug addictions, special attention being given to the abnormal mental states produced by them, and the medico-legal problems which arise. His own experience seems to have been largely with cocaine, which he regards as the typical vice of rich decadents and closely connected with prostitution and alcoholism; but all the various phases of drug addiction are illustrated by numerous interesting cases drawn from the author's own practice. As remedial measures he advocates the international limitation of the cultivation and manufacture of opium and coca, and as national measures the following: (1) The institution of "ambulatorios," presumably out-patient clinics for the assistance of neuropaths. (2) Combined action on the part of the authorities and the League of Mental Hygiene against alcohol and other drugs. (3) Education of the professional classes concerned. (4) A strict watch over contraband. He would make the unwarranted keeping of such drugs illegal and close offending pharmacies. Lastly he would provide an asylum colony for habitual drug-takers and deprive them of civil rights Dr. Bermann interpolates a few notes on drug-taking in the United States, where he estimates it to be at least three times as prevalent as in Cordoba The worst period seems to have been about 1919–20, when its prevalence in the United States led the authorities in two or three States to set up special hospitals and special administrations to deal with it In common with some American writers, he does not consider that prohibition was the cause of so much increase in the United States as many believe No Englishman can read the strictures passed on this country by the author (pp 44–5, 338–9) without pain and a feeling that it is impossible morally to justify the policy pursued by England as regards the opium traffic in China, India, and Burmah for the last century. It would be difficult to persuade even an unprejudiced foreigner that in this matter the claims of morality and health had not been subordinated to those of revenue, but we may at least be thankful that this year, 1927, will see the beginning of the end of opium trading in India and that in ten years' time the Government production of opium, except for purely medical purposes, will have ceased entirely Dr Bermann is perfectly correct in stating that the primary factor in the suppression of the evil is the control of the original sources of production Once produced, all the energies of perverted human nature are called in to effect its distribution

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[1] Thrombosis by W. H. Welch, revised by H. D. Rolleston, Vol. vi., pp. 691–762.

[2] Quoted by D. Riesman, Med. Clin. of N. Amer., 1921, iv., 1006.

[3] Amer. Journ. of Physiol., 1910, xxvi., 453.

[4] Ibid., 1926, lxxvi., 186.

[5] MacCallum's Pathology, 3rd ed., 1924, p. 8.

[6] Toxicomanias. By Dr. Gregorio Bermann, Professor of the Faculty of Medicine, Buenos Aires and Cordoba. Pedro Garcia. Pp. 377.

HANDLING OF WOUNDED IN AMPHIBIOUS WARFARE.

IN the *Military Surgeon* for March two United States medical officers, one from the Navy, one from the Army, discuss the Medical Tactics of Joint Army and Navy Operations, in relation particularly to an opposed landing on a hostile coast, the landing at Gallipoli being their special text They point out that an army cannot itself deal properly with the casualties incurred in landing operations until its hospitals are landed, and that will not be until the landing force has made some headway Meantime the wounded must be sent back to the transports which have been prepared for them This preparation involves close touch between the commander-in-chief and his senior medical officer, who must not be misled by hopeful forecasts as to the probable number of wounded, for there may well be 50 per cent When troops are first landing, only the regimental medical personnel will be wanted ashore, when some advance has been made, field ambulances without transport will be the next need, then casualty clearing stations after them, last of all base hospitals, whose stores and staff may meanwhile be utilised afloat for the early care of the wounded brought back to the transports Landings may take place at several beaches, and transports appropriate to each will be preparing to be hospitals as soon as they have discharged their troops Casualties will be brought back in boats that have landed troops, provided (it is added hopefully) the landing of troops is not thus delayed A naval medical officer, as embarkation officer for wounded, will be on the staff of each naval beachmaster, he will know what transports are available to take what casualties (one detailed for gas cases, one for walking wounded not to be evacuated, and so on), and there will be another naval medical officer with the military officer commanding the landing to give to these naval medical embarkation officers what further or temporary orders become necessary Meantime the military medical officers who can at the moment be spared (as above) will have been assigned to the transports denoted, with orderlies and stores as required. It is thought by the writers that casualties thus embarked in transports will for the future come officially under the Navy until disembarked, though the Army will give all possible help The scheme of which this is a very brief summary is worked out in minute detail, and will afford material for important discussion A semi-official note at the end of the article expresses certain views of the U S Army Medical Department, supposed to be in some degree at variance with those of the sea service That army envisages two sorts of hospital ship one to be used exclusively for treatment of the sick, reported to Geneva by name, painted white and green, carrying the Red Cross, and enjoying immunity from attack or capture; the other known as the hospital carriers or ambulance transports, which may be equally privileged if reported before a war, but which claims immunity only while employed in transporting patients Alternatively, these ships might become immune by transporting exclusively medical personnel and stores on the outward voyage

E 107

AT a recent meeting of the Berlin Medical Association, described in the *Manchester Guardian* for March 25th, clinical reports were presented on the action of a new anæsthetic which has been invented by chemists of the German Dyestuffs Federation This compound, whose nature is not divulged, is called E 107, and has been tried by seven independent observers in some hundreds of cases A small quantity is passed into the rectum in a clyster while the patient remains in bed in the ward, and within seven or eight minutes he is ready for operation, he is sufficiently relaxed, breathing is as quiet as in sleep, and the induction has been acomplished without causing nervousness, struggling, or undesirable reflex actions According to the reported claims, recovery from the effects of administration is unattended by vomiting or any untoward symptom, and the new anæsthetic is regarded as suitable both for the old and feeble, it has been tried successfully for the production of twilight sleep Were nothing else recorded, it might appear that E 107 is an almost ideal means of producing anæsthesia, but unfortunately it caused in some patients a certain amount of intestinal irritation, whilst in others cyanosis supervened and artificial respiration became necessary Prof Unger, however, in his whole series of 300 cases, is said to have noted no irritation of the intestine, a fact which he attributes to having made sure that the samples of the drug had not deteriorated before they were given And it is suggested that respiratory depression only occurs in a certain type of patient From the accounts given in English newspapers it is not clear what type this may be, but the German observers are quoted as saying *that it may be detected* before induction of anæsthesia, so that no one need be given E 107 who is likely to react to it badly Bearing in mind the natural tendency to exaggerate the advantages of a new preparation, it nevertheless seems likely that the drug will be useful The uncertainty of absorption from the intestine must be reckoned with, and it has to be remembered that no injection—whether into skin, muscle, vein, or intestine *—can give the anæsthetist the constant* control of dosage which is possible when administration is by way of the lung A larger margin of safety is therefore required for drugs not given by the respiratory tract Given such a margin, however, it is an advantage to avoid the bronchial tubes and *alveoli* because the chance of post operative pneumonia is thereby lessened

CANCER OF THE CERVIX IN PREGNANCY.

IN a paper read before the Medical Society of the District of Columbia, Dr Joseph T Mundell,[1] of Washington, quoted the following statistics to show that carcinoma of the cervix is rarely seen in association with pregnancy. Sawey in 1899 estimated its occurrence as once in every 2000 pregnancies B C Hirst in 1923, as the result of a questionnaire sent to a number of obstetricians in the United States, found that in a *total* of 299,621 pregnancies there were 24 cases of cancer of the cervix, or 1 in every 12,484 pregnancies The highest and lowest ratios were as follows. Asa B. Davis reported 137,966 pregnancies with five cases of cancer, or 1 in 27,599, while Mussey of the Mayo Clinic reported eight cases among 3500 pregnancies in the course of 13 years, or 1 in 437. In most instances cancer preceded pregnancy, but in a few it developed during pregnancy. The differentiation, however, was without practical significance Opinions are divided as to what effect pregnancy has upon cancer While some authorities maintain that the increase in the blood and lymphatic supply associated with pregnancy tends to favour the growth of cancer, others claim that the great increase in the connective tissue of the pregnant uterus acts as a barrier to malignant aggression On the whole the trend of opinion amongst recent observers seems to be that pregnancy has a tendency to retard the growth of cancer. It is generally accepted, however, that after the termination of pregnancy the growth of cancer is very rapid. As regards treatment an early operable case of cancer of the cervix complicating pregnancy in the third month calls for immediate hysterectomy In more advanced cases this operation is futile. Treatment with radium endangers the fœtus, for although many cases are on record in which it has been used during pregnancy without deleterious effects, it has, nevertheless, been shown repeatedly that radium may do harm both to experimental animals and to the human subject Perhaps, therefore, the most satisfactory treatment to adopt in advanced cases is cauterisation of the cervix Dr Mundell records the case of a well-developed woman, aged 25, whom he treated for rapidly growing cancer of the cervix by applications of radium He was unaware that she was pregnant and had attributed the increased size of the uterus to the advancing growth of the cancer. After six applications of radium a three months' fœtus was expelled, and the woman died seven months afterwards.

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[1] American Journal of Obstetrics and Gynecology, January, 1927

SYNTHETIC THYROXIN

IT is significant that the two awards made at the nnual general meeting of the Chemical Society on Iarch 24th should have been to workers on the onstitution of natural products of therapeutic nterest Prof R Robinson's work on alkaloids earned or him the Longstaff Medal, whilst the Harrison ward went to C R Harington for brilliant and apidly executed research on the active principle f the thyroid gland Kendall, working in the United States, had expressed the view that thyroxin contained he 4 : 5 · 6 tri-iodo 2 : 4 . 5 · 6 tetrahydroindol ucleus and gave an empirical formula $C_{11}H_{10}O_3NI_3$ Harington, believing the properties of thyroxin were more satisfactorily accounted for by ascribing to it a different structure, synthesised 3′ 4′ : 5′ tri-iodo phenylpyrrolidine carboxylic acid, with the disappointing result that the product had not the physiological properties of thyroxin[1] By attacking the natural substance itself he managed to obtain a 0 12 per cent yield from the thyroid, many times greater than Kendall had obtained, and found that the empirical formula was $C_{15}H_{11}O_4NI_4$ The percentage composition of this substance is not very different from that proper to Kendall's formula which was based on rather slender evidence. That Harington's own formula was correct was shown by a study of the constitution of the substance which he found to be an iodine derivative of the parahydroxyphenyl-ether of tyrosine. Harington proceeded to deiodise the natural principle and show its identity with this tyrosine derivative. Finally and very recently a reasoned series of reactions based on the constitution of known natural iodo-derivatives of tyrosine led to the synthesis of β [3 . 5 di-iodo-4 (3′ 5′ di-iodo 4′ hydroxyphenoxy) phenyl] α amino-propionic acid which is indistinguishable chemically and physiologically from natural thyroxin[2] Thyroxin contains about 65 per cent of iodine, a fact so outstanding that as recently as 1918 the late Sir William Bayliss wrote "The most interesting fact, chemically, with regard to the thyroid is the high content in iodine, which appears to be present in a complex organic iodine compound united with a protein That this is the active principle is shown by the fact that the effect of thyroid substance, which is active even when taken by the mouth, is in proportion to its iodine content"

It is highly creditable that a British bio-chemist should have so advanced our knowledge of this important substance While it is unlikely that either natural or synthetic thyroxin will ever become a very cheap drug, the fact that an active artificial product can be prepared ensures the supply, in any desired quantity, of a substance of definite activity. An achievement of this kind is of more value to humanity than the discovery of even the most beautiful of new dyes, but it must not be forgotten that it is only the profound knowledge of the possibilities of complex molecule-building and molecule-analysis which have been developed by "juggling with benzene rings" and other organic complexes that has developed the extraordinary chemical insight and technique that makes the synthesis of such bodies as thyroxin possible

THE STORY OF THE RED CROSS

MANY people charitably inclined and anxious to be of service to their fellows, either by deed or alms, have the most hazy ideas as to what the Red Cross Society is and what it does These will find the necessary enlightenment in Sir James Magill's very readable account of the development of the Society[1] The practical founder of the Society was Mr Henri Dunant, a Swiss gentleman who happened to be present in a private capacity at the Battle of Solferino in June, 1859, when French and Italians attacked Austrians who held a very strong position Three hundred thousand men were engaged and the mass of wounded was so great that the existing medical services were totally inadequate to deal with them In 1862 Mr. Dunant published a book called "Un Souvenir de Solferino," the outcome of which was an International Conference held at Geneva From this Conference sprang the Geneva Convention of 1864, which laid down the lines of treatment of the sick and wounded in war and of persons attending them—i e, they were to be considered neutrals—that are followed to-day. How the Society grew in these islands, and how branches were founded throughout the world is detailed by Sir James Magill The British Red Cross Society obtained a charter under King Edward VII in 1908. A long and most interesting account of its activities and those of the Red Cross organisations of the Dominions, Colonies, Allies, and Neutral Powers during the Great War is given in Chapter IV., and it is worthy of note that in October, 1914, it was decided that the British Red Cross Society and the Order of St John of Jerusalem should pool their resources and enter upon a working agreement with a view to economy and efficiency "during the existing war and thereafter if the circumstances permit and require it" In 1923 the Central Joint V.A.D. Council issued a new scheme for V.A.D.'s, and certain details for this were laid down in Paragraph 17 of the General Regulations (July, 1925); but it is too soon at present to form any trustworthy estimate of how the scheme is working Sir James Magill's book should be read by everyone interested in the work of the Red Cross and its efforts on behalf of all sections of the community in need of its ministration.

THE report for 1925 on the Health of the Army reaches us less than 15 months after the close of the period to which it relates, which is evidence that post-war delay is being overcome The officers' death-rate increased from 3 93 (in the previous year) to 4 44 per 1000, that from injuries dropped from 1 85 to 1 42, but that from "diseases of the digestive system, except liver and tonsillitis" rose from 0 39 to 0 91 The death-rate of other ranks was 2 35 (previous year 2 80), from injuries 0 62 (0 90), from pneumonia 0 33 in both years, from digestive diseases 0 25 (0 21), and from influenza only 0 02 (0 09) The striking feature of the year is the increase in gastric and duodenal ulcer recently noticed, last year there were 25 and 29 cases, but this year 41 and 53. Appendicitis is also on the increase We shall return to the consideration of this Report

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[1] Biochem. Jour 1926, xx 293–299, 300–313.
[2] Ibid, 1927, xxi, 169–181, 181–183.

[1] The Red Cross The Idea and its Development By Sir James Magill K.C B., M.A., M.D., Hon. Organising Secretary British Red Cross Society London Cassell and Co 1926 Pp 144 5s

THE HARVEY MEMORIAL AT HEMPSTEAD CHURCH

Two years ago the Royal College of Physicians of London took the initiative in an appeal for the rebuilding of the tower of Hempstead Church, Essex, where lies the body of William Harvey A marble sarcophagus had been provided by the College in 1883 just after the old battlemented tower with its fire bells had fallen to the ground, and the appeal was directed to medical men of all nations to erect a tangible memorial of one of the great men of their profession The probable cost was estimated at £5000, of which about one-tenth had already been contributed locally

At a meeting of the Committee of the Restoration Fund held at the College on March 9th, the following report was received —

Receipts	£	s	d
Donations received	431	10	6
Interest on Investments, &c	32	2	8
	£463	13	2
Expenditure			
Expenses of Appeal	59	14	10
Purchase of £360 5 per cent. War Stock	363	6	9
Balance in hand and at Bank	41	1	7
	£463	13	2

This is in addition to the sum of £515 collected locally previous to the appeal, and invested in 5 per cent War Stock It was resolved to keep the fund open in the hope of receiving sufficient further support to commence the rebuilding of the tower Subscriptions may be sent to Dr Sidney Phillips, Joint Hon Sec of the Fund, Royal College of Physicians of London, Pall Mall East, S W 1.

A SCHEME OF DISTRICT NURSING —At the College of Nursing on March 24th a number of district nurses met the Directors of the Mutual Property Insurance Company, Ltd , to discuss the nursing service recently organised by the company Miss Dorsey, R N , of the Nursing Division, League of Red Cross Societies, briefly described from the chair her experience when coöperating with the Metropolitan Life Insurance Company of New York. In 17 years the nursing service of this Company paid more than 27,000,000 visits, 3,000,000 in 1926 , during this time the mortality-rate of the population fell by one-half, and that of typhoid by 82 per cent. Miss Dorsey urged district nursing associations to coöperate with the M P Insurance Company Dr J A H Brincker spoke of the new arrangement between public health authorities and the Metropolitan Asylums Board, whereby, in a measles epidemic, preference in admission to hospital would be given to severe measles over mild scarlet fever, and thus a new field for service would be opened to the district nurse In the ensuing discussion an almost unanimous desire was expressed for the development of public health nursing in this country on general rather than on special lines Miss Wilmshurst, S R N , superintendent of the Metropolitan District Nursing Association, spoke of the preventive side of district nursing and the opportunities it affords for health teaching in the home

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CCXVII —THE TREATMENT OF CHRONIC APPENDICITIS

THE term "chronic appenditicis" in its widest sense includes all those cases which are not acute, and therefore includes the interval appendix In cases which have been tided over an acute attack by means of expectant treatment, the appendix should be removed after infection has subsided and before recurrence is likely Commonly the time selected is about three months after convalescence from the acute attack ; a longer interval subjects the patient to the risk of another acute attack, especially in young patients. It is estimated that 80 per cent of patients of all ages relapse within two years after an initial attack of acute appendicitis without appendicectomy In these cases a definite diagnosis has presumably been made, and therefore, unless any other lesion is suspected, a gridiron incision gives suitable exposure. As a rule surprisingly little pathological change is found in an appendix which was known to have been acutely inflamed or even the cause of an abscess a few months previously. A few limited adhesions, a stricture or a fibrotic tip are commonly the only legacies of the acute attack

Chronic appendicitis may present as one of two more or less definite clinical entities—i e , the intermittent, and the chronic dyspeptic type

The Intermittent Type

The intermittent type is characterised by recurrent attacks of pain, sometimes colicky in nature, which originate in the neighbourhood of the epigastrium or umbilicus, and are later referred to the appendicular region Vomiting may occur, but is not a marked feature After an interval varying from a few hours to a few days the symptoms abate, leaving a temporary local soreness in their wake On examination some deep tenderness can usually be elicited in the lower right quadrant, and occasionally a thickened or concretion-containing appendix can be palpated through a thin abdominal wall

On removal the appendix is found to contain a concretion or possess a stricture, the symptoms presumably being due to spasmodic efforts of the organ to overcome the resultant obstruction

The Dyspeptic Type

The dyspeptic type of chronic appendicitis is less definite in its symptomatology, and may mimic almost any chronic abdominal condition Generalised abdominal discomfort is more or less constant and may be aggravated by exercise Hæmatemesis and even melæna may occur, but the periodic remissions of symptoms so characteristic of gastric or duodenal ulcer are not marked Symptoms are not relieved by recumbency or pregnancy, which fact may assist in the differential diagnosis of visceroptosis Neurosis is a commonly associated condition, being partly due to prolonged ill-health, and sometimes aggravated by injudicious treatment The discomfort associated with renal conditions is usually limited to the side of the lesion, whereas, although the tenderness of chronic appendicitis is commonly localised to the right iliac fossa, the actual pain is referred more centrally Suspicions of pelvic disease may be aroused by the history of the case, pain is commonly referred to the lower part of the back, and routine examination usually reveals the cause of the trouble

On removal this type of appendix may show generalised or local fibrosis, especially of the tip In other cases the organ may be transformed into a mucocele, or even an empyema

Differential Diagnosis.

The various conditions which must be borne in mind in the differential diagnosis of chronic appendicitis may be summarised as follows:—

Thorax.—Prodromal dyspepsia of phthisis.

Upper abdomen.—Gastric and duodenal ulcers, gall-stones, chronic pancreatitis.

Central abdomen.—Visceroptosis, tuberculous or chronic simple adenitis, colitis.

Pelvis.—Pyosalpinx.

Genito-urinary.—Renal calculus, chronic pyelitis.

Central nervous system.—Neurasthenia.

It will be seen from this summary how many are the pitfalls waiting to entrap the unwary. The public, and even some practitioners, think that chronic disease of the appendix can be diagnosed with certainty by a single abdominal palpation, but in fact it is not easy to decide whether or not the condition is present. Even when symptoms continue after removal of an apparently normal appendix they are sometimes ascribed to "adhesions," until the real cause of the trouble is discovered or manifests itself later.

Exhaustive examinations and repeated observations are usually necessary, particularly with the dyspeptic type, and even then a tentative diagnosis may only be made by a process of exclusion. The mimicry of chronic gastric ulcer by a diseased appendix has been referred to above, and may even be carried to the length of hyperacidity and hypertonicity. If the organ is diseased, removal will probably relieve the symptoms and may restore physiological balance—i.e., the hyperacidity and hypertonicity associated with appendicular gastralgia may disappear. Similarly, persistent colitis may be maintained by a diseased appendix, and if definite symptoms and disability are present, then laparotomy may be justifiable in order to ascertain the condition of the appendix and to estimate its influence on other abdominal organs.

Much has been written regarding the value of barium meals or enemata in the diagnosis of chronic appendicitis. Distortion or kinking of the appendix, retention of barium after the emptying of the cæcum, and tenderness on palpation have all been mooted as diagnostic of pathological changes. However, much must depend on chance as to whether opaque media enter the appendix, or, having entered, how long the medium will be retained. Moreover, palpation of any appendix which is distended will naturally elicit tenderness. In the experience of most surgeons, radiography is of little value in the diagnosis of chronic appendicitis.

Conservative Treatment.

Having considered the differential diagnosis from other surgical conditions, consideration should be given to teeth, diet, mode and habits of life, particularly with regard to smoking, overwork and lack of exercise. Conservative lines should especially be considered in connexion with neurasthenics and elderly patients, especially females.

Operative Measures.

If improvement is unsatisfactory then operation is seriously considered, particularly under the following circumstances:—

1. Recurrent cases, especially if colic is well marked, as the diagnosis is then usually correct.

2. In children, as prolonged dietetic treatment and restriction of activities are obviously unsuitable. Also the neurotic element can usually be excluded and the risk of acute exacerbations is greater than in adults.

3. When the appendix, if diseased, may be exerting a malign influence on other abdominal organs—e.g., stomach, colon. If in the absence of physical signs, symptomatic treatment does not relieve the patient and no marked neurotic element is present, then the condition of the appendix should be verified.

4. In a few cases, if a family predisposition to acute appendicitis exists, appendicular symptoms may justify appendicectomy, both from the risk of an acute attack, and to relieve the patient of a natural dread of a sudden dangerous illness.

In considering the treatment of chronic appendicitis, appendicectomy is, of course, indicated in all genuine cases.

If, in the event of an error of diagnosis, some other condition is present which is amenable to surgical treatment and may be dealt with through the laparotomy wound, little harm is done, but good exposure must be obtained in order that other lesions may be readily recognised.

With regard to the means of approach, the gridiron incision provides adequate exposure if no other pathological lesion is present. However, complete exposure is impossible through this incision, and the upper abdomen and pelvis are out of reach for surgical procedures. The surgeon who explores the pelvis by means of one finger inserted through a gridiron incision merits, and often obtains, the derision of the gynæcologist.

Battle's incision, which consists in inward displacement of the rectus muscle has nothing to commend it. If prolongation of the incision is necessary, intercostal nerves are seriously jeopardised, and in any case they are likely to be crushed if the vessels which accompany them are injured. Injury to these nerves results in risk of subsequent ventral or inguinal herniæ. Therefore in chronic cases the most suitable incision is undoubtedly the right paramedial, as laparotomy for chronic appendicitis is probably the opportunity of a lifetime to explore the whole abdomen, and it is universally accepted that chronic appendicitis is frequently associated with, and possibly the cause of, such conditions as gastric or duodenal ulceration and gall-stones.

The incision commences at the level of the umbilicus, one inch from midline, and extends downwards for about four inches. The anterior sheath of the rectus muscle is divided and separated inwards until the inner border is exposed. The muscle is then retracted outwards and the posterior sheath of the peritoneum divided, the deep epigastric vessels being ligatured if necessary. The cæcum is withdrawn and the appendix removed. Systematic examination is then made of the abdominal contents, particularly the stomach and duodenum, biliary apparatus and the pelvis. Should other conditions be present which are amenable to surgical treatment, the incision may be prolonged in either direction as far as necessary, the rectus and its nerve supply being safely displaced outwards.

In conclusion, mention must be made of the so-called carcinoma, or the cancroid appendix. The condition occurs most commonly in young adults, and is uncommon, only two cases occurring in 750 consecutive appendicectomies by the writer. It is usually revealed by acute infection superimposed on the chronic condition. On removal the appendix is markedly thickened and may be one inch in diameter. Microscopically the condition is one of spheroidal-celled carcinoma. The condition is relatively innocent, secondary deposits being recorded in only 12 per cent. of cases.

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MIDDLESEX HOSPITAL.—The most important announcement made at the annual meeting, over which Prince Arthur of Connaught presided, was that £100,000 had been given anonymously for the building of a nurses' hostel on a site adjoining the hospital. At present the nurses are housed in five separate buildings. The gift will provide for the first section of the hostel, with about 180 bedrooms, together with refectory and recreation accommodation for the full personnel, ultimately to be lodged in it. It is expected that the rebuilding of the west wing of the hospital will be begun by midsummer.

Special Articles.

BOVINE TUBERCULOSIS AND THE TUBERCULOSIS ORDER, 1925.

BY WILLIAM G SAVAGE, B Sc, M D LOND,
MEDICAL OFFICER OF HEALTH FOR THE COUNTY OF SOMERSET

THE evidence is conclusive that a material proportion of human tuberculosis is of bovine origin, due to the consumption of cows' milk containing living tubercle bacilli Any measures in force for controlling and diminishing the amount of bovine tuberculosis must therefore be of interest and practical concern to those engaged in public health The Tuberculosis Order has been advocated and recommended, not only as a valuable agent for the diminution of bovine tuberculosis, but also as an important means of reducing the dangers from tuberculous milk It is necessary to study with care the actual working of this Order, and to try to ascertain how far it is likely to reduce the danger of milk acting as a vehicle for the conveyance of tuberculosis With this object I have made a careful study of its working in a very large dairy county for the 16 months of its operation to the end of 1926 I have no reason to believe that the procedure in this county differs in any essentials from the practice all over England while in many ways its administration must be regarded as on a high level, as regards the care with which different requirements are carried out

The Theoretical Aims of the Order

It is admittedly impracticable to slaughter all cattle suffering from tuberculosis The Order does aim, however, at reducing infection and so diminishing the amount of tuberculosis It is a development of the method advocated by Prof Ostertag, of Berlin, of the elimination of all "open" cases of tuberculosis from dairy herds In his method this was attained by periodical examinations of the herds by veterinary inspectors, together with bacteriological examination of the mixed milk If tubercle bacilli are found in the , or if suspicious animals are clinically detected, erinary and bacteriological examinations are again de of these animals The animals with "open" erculosis are slaughtered, while the premises are roughly disinfected This complete plan is not followed, but in the words of the circular of the Board of Agriculture—

> "The Order aims at the destruction of every cow suffering from tuberculosis of the udder or giving tuberculous milk and every bovine animal suffering from tuberculous emaciation or suffering from a chronic cough and showing definite clinical signs of tuberculosis"

Three types of tuberculosis are scheduled, i e —

(1) Any cow which is, or appears to be, suffering from tuberculosis of the udder, indurated udder, or other chronic disease of the udder

(2) Any bovine animal which is, or appears to be, suffering from tuberculous emaciation

(3) Any bovine animal which is suffering from a chronic cough and showing definite clinical signs of tuberculosis

These three types may conveniently be called the designated types of tuberculosis The knowledge of these animals administratively is obtained from two sources, i e —

(1) Every person in charge of an animal which may be suffering from one of the designated types of tuberculosis has, without unavoidable delay, to give information of the fact to a police-constable or to an inspector of the local authority.

(2) A veterinary surgeon who, in his private practice, comes across such an animal has to notify it to an inspector of the local authority

The Order provides for examination of these notified animals by a veterinary inspector appointed by the local authority, for their slaughter if considered to be in one of the three designated groups with compensation to the owner according to a definite scale. The local authority referred to is the local authority under the Diseases of Animals Act, 1894

To estimate the efficiency of the Order as an agency to reduce bovine tuberculosis, certain points are obviously of fundamental importance

The Stage at which the Three Specified Classes of Tuberculous Animals are Notified and Destroyed

These cases of advanced tuberculosis are a great danger to the rest of the herd, since they eliminate tubercle bacilli in their expectoration and in their fæces Ostertag's procedure has a definite scientific aim—i e, to detect these animals by the aid of bacteriology and veterinary examinations within a short time of their becoming "open" cases The Tuberculosis Order does not make use of these aids, but relies on a system of notification by owners and veterinary surgeons In this country it is not the practice of farmers and breeders to have systematic veterinary inspection of their bovines, but only to call in a veterinary surgeon when an animal is definitely ill Only a small proportion of animals in the designated classes are likely therefore to be notified in this way Of the 798 animals dealt with to the end of 1926 only 172 were reported by veterinary surgeons, and this number includes those found when inspecting herds containing a notified animal, while 612 were reported by owners, the remaining 14 being otherwise reported In practice the onus of reporting these designated animals is mainly thrown upon the owners The average farmer is very ill-informed in regard to tuberculosis which cases are dangerous, and how it is spread Tuberculosis of the udder is difficult to diagnose except when advanced The owner has not to report emaciation, but only an animal which "appears to be suffering from *tuberculous* emaciation"; he has not to report a chronic cough, but only an animal which is "suffering from a chronic cough *and* showing definite clinical signs of tuberculosis" He is under no obligation to call in veterinary assistance if he suspects, and obviously he can postpone notification until any animal is of no further use to him without the slightest risk of incurring any penalty.

Theoretical considerations suggest, therefore, that the bulk of the animals are only likely to be reported after the condition has existed for a long time, and after the animal has been an active spreader of infection This is amply substantiated when an analysis is made of the returns.

The 798 cases were as follows —

Classed as "advanced" tuberculosis .	496
" " "not advanced" .	284
" " udder tuberculosis (entirely or mainly)	13
No tuberculosis at post-mortem	5

A number of the "advanced" and "not advanced" groups showed udder lesions, and this point is dealt with below, in addition to other lesions of tuberculosis.

Section 9 (4) of the Order defines the conditions to be included as "advanced" tuberculosis. It must be noted that "not advanced" under this Order does not mean what it would do in a medical diagnosis An animal can have extensive and old-standing lesions and still be classed as "not advanced" The following are examples of post-mortem records of cases classified as "not advanced".—

Tuberculosis of the lungs, pharyngeal, mediastinal, and mesenteric glands
" " mesenteric glands intestines, and several joints
" " both lungs and miliary tuberculosis of the liver
" " the intestines and of the bronchial glands
" " the lungs, pleura, and mesenteric glands

It is evident that a good many of the cases included in my summary as "not advanced" belong to the advanced group, and if correctly placed would have sent still higher the percentage of advanced It is perfectly clear from the above figures and a study of the post-mortem returns that a preponderating proportion of the cases are old long-standing cases, most of which have been excreting tubercle bacilli for a long time before their slaughter under the Order A single example may be quoted, and it refers to an animal killed December, 1926—

i e , after the Order had been in operation for nearly 16 months The post-mortem record reads —

> "Generalised tuberculosis tuberculosis of liver, kidney, pleura, intestines, miliary tuberculosis of both lungs, submaxillary, parotid, pulmonary, bronchial and hepatic glands tuberculous No tuberculosis of the udder"

The Extent to which the other Animals are Examined in a Herd found to contain a Positive Notified Case of Open Tuberculosis

The Ministry of Agriculture and Fisheries emphasise the importance of this in Circular Letter No 13 (July, 1925), and point out —

> "Where the report has been received in respect of a particular animal the examination conducted by the veterinary inspector should not be confined to the animal which was the subject of the report, but should be extended to other bovine animals on the premises, and particularly to all milch cows, and the veterinary inspector should make an exhaustive clinical examination of any animal which there is reason to suspect of suffering from tuberculosis of the udder, from tuberculous emaciation, or of giving tuberculous milk".

Such an investigation is obviously of great importance from the preventive standpoint There are three different attitudes One is the wording of the Order itself which is non-committal and leaves it entirely to the veterinary inspector to examine any other animals on the premises which he "considers it desirable to examine" The second is the wholly admirable urge of the Ministry of Agriculture, quoted above, to investigate the other animals for sources of tuberculous infection The third attitude is that of the local authorities administering the Order which, so far as I can ascertain, is generally in the direction of strongly discouraging any detailed examinations of the other animals I have been told by responsible veterinary inspectors in other areas that they have been definitely instructed not to examine the other animals except under special circumstances

In the county under consideration it is evident that only in a quite small minority of cases are the other animals examined This is shown by three sets of facts In the first place, an examination of the actual returns shows that it is quite the exception to examine the other animals, although a place is provided for this information The records are badly kept as regards this point, so exact statistics cannot be given, but even giving the credit to doubtful cases, the total of herds examined is a very small proportion of the whole The usual plan seems to be to ask the farmer if he has any doubtful animals, and to look at these, while in some cases the animals are paraded for the inspector, but clearly this is not in any sense an examination

In the second place the extra fees paid out to veterinary surgeons for these secondary examinations amount to a very small sum during the 16 months, and afford definite evidence of active discouragement

The third fact is the number of cases in which the examination of the other animals has resulted in the detection of an animal suffering from one of the designated types of tuberculosis During the whole 16 months only 24 such positive cases were reported Some of these were after an examination of all the bovines, or at least of all the cows, but in a good many cases they were individual suspected animals brought forward or picked out without an examination of the whole herd The primary animal causing the veterinary inspector to visit was either an animal suffering from emaciation or chronic cough, none from tuberculosis of the udder Most were single cases, but three were on one farm, and two were reported from each of two farms—i e , they were from 20 herds These 24 animals were —

8 cases of advanced tuberculosis } with no mention of udder
7 ,, ,, not advanced ,, } involvement
5 ,, ,, advanced ,, with definite udder tuberculosis
4 ,, ,, udder tuberculosis (alone or mainly)

It is certain that if more herds had been systematically examined many more affected animals would have been discovered One example of what happens may be quoted An emaciated animal was slaughtered, November, 1926, and showed post mortem very advanced tuberculosis, the following being mentioned as tuberculous—both lungs, pleura, peritoneum, liver spleen, intestines, and mesentery There were 50 cows and 30 bovines on this farm, yet none were examined although, obviously, this animal must have been actively infectious for a long period

The Extent to which "Udder" Tuberculosis is being Notified

The records show that the 798 cases reported were for the following conditions —

Tuberculous emaciation or chronic cough = 738
Udder tuberculosis = 60

The udder notifications were fairly uniformly distributed in time, since the notifications in the four four-monthly periods from Sept 1st, 1926, to the end of 1926 were respectively 15, 15, 14, 16 There is therefore no evidence that cases are being reported more frequently as the Order becomes better known The post-mortem findings in these 60 cases were, —

"Advanced" tuberculosis, with udder involvement as part of the general tuberculosis = 33
Considerable lesions in other organs as well as the udder but classed as "not advanced" = 9
Udder lesions only reported = 13
No tuberculosis of the udder = 5

These findings are of considerable interest They show only 13 cases of udder tuberculosis alone, while in 42 the udder involvement was merely part of a general tuberculous infection

While 60 out of 798 cases (7 5 per cent) seems a fair proportion, other facts have to be considered In five cases the swollen or indurated udder which led to the primary notification was found *post mortem* not to be due to tuberculosis Four of these were "advanced" tuberculosis without udder lesions, the fifth animal showed no tuberculosis anywhere Three cases were not primary notifications under the Order, but were detected by the examination of cows in the notified herd Three other cases were discovered in connexion with inspections under the Milk and Dairies Act, 1915—i e , from the examination of herds the milk from which was found to contain tubercle bacilli They were subsequently dealt with under the Tuberculosis Order as a matter of policy and so become included They cannot properly be included as notifications made in connexion with the working of the Order. The exclusion of these 11 cases leaves only 49 cases of udder tuberculosis which were reported under the Order In no less than 33 of these the udder lesions were a more or less accidental concomitant of a state of advanced tuberculosis for which the animals were dealt with We are left with only 10 cases of primary udder tuberculosis reported as primary notifications under the Order It cannot be contended from these figures that the Order is doing anything material to eliminate cows suffering from primary udder tuberculosis

There are some 100,000 cows in the county, and if the proportion of udder tuberculosis is taken as 0 3 per cent (which is well below the figures of most veterinary authorities) this gives about 300 cows as suffering at any one time from tuberculosis of the udder This includes primary udder tuberculosis and cases in which udder disease is part of a general tuberculosis. I have examined the post-mortem records of the whole of the 798 animals slaughtered under the Order to the end of 1926 It is probable that udder disease is not investigated in cases with conspicuous lesions elsewhere, but since March, 1926, veterinary inspectors have been specially asked to investigate and record this point In the later schedules udder disease, positive or negative, is specially mentioned in a material proportion of the cases The following table shows, therefore, the figures recorded separately for the first six months and the last nine months.

Dealing only with the figures for the last nine months of 1926, they show that out of 451 cases there were 85 cases of udder involvement—i e , 18 8 per cent

The animals slaughtered include all bovines, and therefore a proportion are not females If, however, only the figures with definite information supplied as to the condition of the udder are considered, they show that out of 302 cases there was udder involvement in 85 (28 per cent) A total of 85 cases of udder disease falls very far short of the estimated number of 300, and it is evident that the majority of cases of udder tuberculosis are not being dealt with under the Order It must, however, be credited as one satisfactory feature of the Order that during 16 months working 131 cows with definite disease of the udder, the majority of which were supplying milk for human consumption, were destroyed

Post-mortem findings	Sept 1st, 1925, to March 31st, 1926	Last 9 months of 1926	Total
" Advanced "—			
Condition of udder not mentioned	177	113	290
Udder mentioned as not involved	—	109	109
With udder involvement	34	63	97
" Not advanced "—			
Condition of udder not mentioned	122	33	155
Udder mentioned as not involved	—	108	108
With udder involvement	4	17	21
Udder tuberculous lesions mainly or only	8	5	13
Animals not tuberculous	2	3	5
—	347	451	798

The Extent to which Laboratory Facilities are being Utilised to Ascertain if Suspected Animals belong to one of the Designated Types of Tuberculosis

Laboratory facilities are provided free of cost, the work being done in the county laboratory An outfit and all information is sent on request Out of the whole 798 cases laboratory diagnosis is reported as made use of in only 15 instances Four of these do not properly come under the Order as they were four positive cases detected under the Milk and Dairies Act, 1915, and merely slaughtered under the Order. Excluding these the other cases were —

In 4 the veterinary surgeon reported he had examined the milk and found tubercle bacilli

In 1 the veterinary surgeon examined material from a discharging neck gland and found tubercle bacilli

In 6 cases samples of milk were examined in the county laboratory (5 positive)

These figures show that laboratory diagnosis is hardly being used at all This is a significant subsidiary proof that it is only advanced cases, easily recognised clinically, which are being dealt with, and that no endeavour is being made to eliminate udder tuberculosis All experienced veterinary surgeons are aware of the need for bacteriological assistance to diagnose early and doubtful cases of udder tuberculosis I have investigated, accompanied by a veterinary surgeon, a good many herds, the milk from which has yielded tubercle bacilli Invariably such herds have contained cows which showed mammary abnormalities which the veterinary surgeon was unable to exclude as not tuberculous without a bacteriological investigation of the milk It is true most of these have been negative bacteriologically, but the fact illustrates the necessity of bacteriological examinations in doubtful cases I trace part of this neglect of laboratory assistance to the fact that no conference of veterinary surgeons working the Order was ever held, and that no whole-time veterinary officer was appointed to coordinate the work

Disinfection of Premises after " Open " Cases of Tuberculosis have been Destroyed

The requirements of the Order (Section 13) are very vague, and if disinfection at all is to be carried out or how it is to be done is left to the discretion of the police Although we may not all agree as to the practical utility of disinfection in such cases, the disinfection of cowsheds is a valuable method of bringing home to the cow-keeper the infectious nature of these open cases and the importance of reducing infection Personally, I think disinfection is itself a valuable preventive measure if adequately carried out Disinfection is a scientific matter, and disinfection of cowsheds particularly difficult One is left wondering what part of the training of the police fits them for the exercise of these functions and without expert guidance In Somerset I have drawn up a simple procedure for disinfection, and the chief constable has issued instructions for disinfection to be carried out along those lines This, however, is outside the Order, and there is nothing in the Order suggesting obtaining the advice of an expert or indeed suggesting that disinfection should be generally carried out I fancy an inquiry as to the procedure followed in different areas would be illuminating

Summary

Assuming, as I am compelled to do, that the above account of the actual working methods of this Order is in no way peculiar or abnormal, it gives a clear idea of what is being done, and furnishes a basis on which to frame an opinion as to what is likely to be accomplished No effective steps are being taken to explain to the owners of the cows the real nature of tuberculosis, the economic importance of eliminating it, the preventive possibilities and aims of the Order the objective signs in cattle to look out for, or to offer veterinary and laboratory help to detect these dangerous animals in the early stages of their growing infectivity Simple and clearly written instructions as to their responsibilities under the Order are not issued The great bulk of the animals slaughtered under it are destroyed only after they have been highly infective for a long antecedent period, and after they have had prolonged opportunities to infect the other animals in the herd and the byres. They are slaughtered when much of the harm they are going to do has been done No effective steps are taken to carry out the printed recommendations of the Board of Agriculture in regard to the detailed examination of the other animals in the herd, even when the slaughtered animals are in an advanced stage of tuberculosis, and suffer from such infective conditions as severe chronic cough or diarrhœa Such disinfection as is practised is in the hands of the police, and is entirely unsupervised by anyone who knows what disinfection means The elimination of tuberculosis of the udder is, in the main, neglected, and no effective steps are taken to encourage the use of bacteriological methods of diagnosis The cost of working the Order is considerable both for compensation and administration, and being without any preventive outlook it is difficult to see what is the gain to the community from this heavy expenditure

Perhaps a clearer appreciation of the futility of the Order, as it is being worked, will be obtained by imagining our preventive work against human tuberculosis carried out along these lines No steps would be taken to enlighten householders where there was an advanced case of tuberculosis of the dangers of infection to the other inmates or to explain how the disease is spread No action would be taken to isolate or remove the advanced case until he or she had been actively infectious for a very long period, possibly a year or more When nearing his end, the case would be removed from the house (the equivalent of slaughter for cows) No steps would be taken to examine the contacts to see if they had tuberculosis and no advice would be given in regard to them The police would then be allowed to disinfect according to the ideas of the chief constable, but no officer experienced in disinfection would be permitted to interfere Finally, the local authority would pay the householder a sum of money because he had had an advanced case of tuberculosis in his house

It is not the purpose of this paper to discuss the best way to deal with the very difficult problem of bovine tuberculosis On the other hand, assuming that the principle of working along the lines of the Tuber culosis Order is retained, it is perhaps worth while to indicate certain directions along which, in my opinion, its working might be improved

Tuberculosis is a cause of enormous financial loss to the farmer, breeder and butcher. Authorities agree that, quite apart from any question of human infection, it is of the highest benefit to agriculture to eliminate it or at least reduce its ravages Part of the success of methods for the reduction of human tuberculosis undoubtedly are due to the persistent efforts which have been made to enlighten the public as to its methods of spread and the feasibility and importance of prevention The same policy is necessary as regards bovine tuberculosis To throw upon the farmer the duty of detecting and notifying such highly technical conditions as tuberculosis of the udder, tuberculous emaciation and chronic cough, accompanied by definite clinical signs of tuberculosis without giving him advice or guidance can end in nothing but the notification of animals in a highly advanced condition, and after they have spread much infective material My figures show that more than three-quarters of the notifications were directly made by the owners I am aware that agriculturists can obtain excellent leaflets from the Board of Agriculture on many subjects, including tuberculosis, but I am unaware of any systematic educational efforts being carried out along the lines I have indicated

Such educational efforts cannot teach the owners of herds how to diagnose tuberculosis, and this alone is not enough They must be made interested and brought to realise that the presence of these "open" cases is a direct menace to the healthiness of their herds, and that it is financially to their advantage to eliminate them as soon as possible It should be made a duty under the Order to report all animals *suspected* to belong to one of the designated groups To be effective, this must go hand in hand with the education just mentioned as to the financial advantage of eliminating these animals The local authority should provide veterinary assistance, free of charge, to ascertain if these suspected animals did come under the Order As a natural corollary any owner found to have an animal in an advanced stage of tuberculosis which he should have and did not report as a suspected animal would be fined, and no compensation paid for slaughter. This would increase his interest in the problem The benefit of free veterinary assistance for suspected animals would be of great assistance to owners of herds, and only the neglectful indifferent farmer would be penalised It would prevent some of the scandals which occur at present of cows being deliberately milked to the bitter end although clearly in an advanced stage of tuberculosis, and then when no longer of use as milkers, being reported and compensation claimed

A system of regular veterinary inspection of dairy cows is obviously a much better procedure than the above as a means of reducing tuberculosis but the cost is prohibitive, if done adequately As a step towards this goal and one costing very much less money, is the examination of suspected animals When a veterinary surgeon is on a farm examining a notified animal it does not take long to examine the other animals, and it should be done as a routine measure It should not be left to the discretion of the veterinary inspector, since when the local authority paying him his fees discourages such examinations it puts him in a highly invidious position It should be a duty, and a proper entry should be made on his return giving the number of bovines examined and stating definitely that in his opinion none or which come under the designated groups and giving particulars of those which are suspicious In view of the difficulty of the diagnosis of udder tuberculosis in its early stages, there is need to encourage and facilitate a much greater use of bacteriology as an aid I am decidedly of opinion that these examinations should be carried out by a competent bacteriologist in a properly equipped laboratory

The whole question of the administration of this Order needs revision From communications from other county medical officers it is evident that in most counties it is administered by the Agricultural Committee, and without any liaison with the Public Health Committee or its medical officer of health The general procedure seems to be to carry it out by means of part-time veterinary surgeons and without any controlling expert There is no expert to attend the committee and advise as to the proper way to work the Order There is no expert to see that the details of the Order are carried out as they should be In some places the chief constable seems to be the controlling official. The inevitable result is that its preventive possibilities are overlooked, and the Order is looked upon as something to be worked as economically as possible, and administrative endeavour is tuned to the reduction of the cost of its working To be of any lasting value the Order must be worked on preventive lines with a preventive outlook, and this means the guidance of an expert in preventive work To do so means a much greater expenditure in the earlier years, but one which ought to steadily diminish. (I pointed this out in 1913 in connexion with the Tuberculosis Order, 1913) The present procedure means a heavy expenditure which is not likely to show any material diminution year by year, since I cannot see that any prevention of tuberculosis is likely to result To spend more money initially and do real preventive work is much sounder economy than to cut down costs to the lowest possible, and as a result waste all the money as regards doing anything to reduce the spread of infection

Improvements are also necessary on the technical side. For reasons somewhat similar to those which make whole-time medical officers of health more effective and untrammelled than part-time medical officers, whole-time veterinary inspectors to work the Order are to be preferred Financial considerations do not make this practicable in most counties at the present time I regard it as essential, however, that each county of any size should have at least one whole-time veterinary surgeon on its staff He would be the expert official who would advise the Agriculture Committee in regard to the working of the Order, and who would control the work of the part-time men and unify their practices He would also be able to carry out a number of the examinations himself Under the Milk and Dairies (Consolidation) Act, 1915, and the Milk and Dairies Order, 1926, the county councils have considerable duties and powers with regard to the inspection and examination of cows, and these would be carried out by this whole-time officer These powers are worked by the Public Health Committees, and this Officer should be on the staff of the county medical officer of health and under the Public Health Committee This would ensure that coordination of effort which is so lacking at present and would help to give the preventive outlook to the working of the Tuberculosis Order, 1925

Assuming the continuance of the principles of the Tuberculosis Order as the official method of reducing tuberculosis, I submit that unless a radical change of procedure is instituted very little will be accomplished in the way of reducing bovine tuberculosis; indeed it is likely to do harm, since the money available for tuberculosis prevention and reduction is limited To drain it away along a channel which has little or no preventive prospects will prevent it being applied in directions where it might be beneficial

RONTGEN SOCIETY—A general meeting of this Society will be held on Tuesday, April 5th, at 8 15 P.M , in the British Institute of Radiology, 32, Welbeck-street, London, W 1 Dr J V Sparks will read a paper on the Uses of Lipiodol as an Aid to Diagnosis in Diseases of the Chest, and Mr F Melville will speak on X Ray Cinematography

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE FIRST REPORT FOR 1926.

Dr. R J. Moule Horne's report for the Borough of Poole is the first of the 1926 Reports to reach us The following are some of the statistics for his district. Estimated (R G) population, 49,150, birth-rate, 17 5; death-rate per 1000 of the population (all causes), 11 25, tuberculosis, 1 04, cancer, 1 62, respiratory diseases with influenza, 1 5, heart disease, 1 5 Death-rates per 1000 births. neonatal, 30, infantile, 53; maternal from childbirth, 3 5

Poole, Dr Horne tells us, is the largest town in Dorset and is rapidly increasing in popularity as an all-the-year round health resort, especially for people who have spent years in the tropics The enclosed waters of the harbour and the shelter of the Purbeck Hills temper the summer heat and the winter cold and the town escapes the sea-mists of the coast-line The rapid development threatens the pine-clad areas and "if," he warns his fellow-citizens, "Poole will maintain its pride, it must preserve its pines." The average yearly rainfall is 31 in and the sunshine 1715 hours The industries are not unhealthy—e g, pottery, brick, earthenware, and tile-manufacturing, fishing, &c—but there is an undesirably large percentage of unskilled labour associated with the docks and quay The number of the unemployed gradually decreased from 1179 in 1921 to 361 in 1925 but in 1926 there was a set-back to 625.

Poole is well off for parks and open spaces and Alderman H S Carter, the present mayor, has just presented a playing field to the borough The population fluctuates year by year according to the varying influx of mostly elderly residents The housing shortage does not appear to be acute but at the end of 1926 it was estimated at 484 houses When the death-rate was corrected for the unusual age constitution of the population, the rate of 11 25 becomes 9 45 The corporation water-works supply a hard chlorinated water from deep wells in the Corfe Hills, but about 6000 of the population are supplied by the Bournemouth Water Company The rate of building tends to outrun the provision of sewers and roads, and there are 180 more cesspools to be emptied by the health department than was the case five years ago and a further 100 will be added in 1927 In certain weathers access to the houses for this service is impossible owing to the state of the roads One objectionable refuse tip was closed during the year The deposit of the refuse is used for reclaiming land in two areas, and Dr Horne hopes that these areas will be rapidly filled up and a more sanitary method of disposal adopted The public lime-washing of courts and alleys is said to have a stimulating effect on the adjoining householders

The open air swimming-bath at Baiter is well used during the summer months and it is proposed to have a second bath in another situation Figures are given which indicate a decline in the rat population as the result of vigorous measures taken during the last five years During the summer months the fresh-water lakes and ponds are sprayed with paraffin in order to keep down the mosquitoes There are 14 private slaughter-houses scattered about the borough and a considerable proportion of the Bournemouth meat-supply is derived therefrom The new meat regulations have entailed much more work on the sanitary inspectors owing to the butchers having to give three hours' notice of intention to slaughter Thus instead of about 400 visits to slaughter-houses during the year there were 1160 during 1926 Dr Horne would much like to see a modern public slaughter-house erected for the borough Poole oysters were a delicacy relished by the Romans Nowadays with a population of 200 000 living near the bay and harbour the oysters dredged from the harbour have to be relaid for 14 days in the Arne reach prior to their sale in the open market During the last season licence was given for the dredging of 600,000 oysters

The infant mortality report shows that there were 44 stillbirths and 46 deaths of infants, and that the mortality for the one to five age-group is only half of what it was 15 years ago, and has, in fact, during that period improved more than the infant mortality The number of cases of notified ophthalmia neonatorum has fallen gradually from 21 in 1921 to three in 1926. Full sight was preserved in all, with the exception of one impaired vision in 1921 There are 16 elementary schools with 6275 names on the register The head of each school was provided during the year with a well-equipped emergency dressing outfit for first-aid The school dentist inspected 5210 children, of whom 3340 were ascertained to require treatment, and 1677 actually attended the minor ailments clinic and received treatment The scheme of treatment charges has affected the dental cases more than any other branch. During the last three years the receipts from fees have been £8 12*s*, £13 3*s*, and £13 for dental treatment and £33 10*s*, £33 12*s* 6*d* and £34 11*s* 6*d* for treatment of all kinds It is pertinent to ask what was the actual cost of collecting these small totals of fees

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED MARCH 12TH, 1927.

Notifications—The following cases of infectious disease were notified during the week:—Small-pox, 442 (last week 412), scarlet fever, 1400; diphtheria, 942, enteric fever, 65, pneumonia, 1580 (last week 2379), puerperal fever, 39, puerperal pyrexia, 129, cerebro-spinal fever, 9, acute poliomyelitis, 9, acute polioencephalitis, 4, encephalitis lethargica, 30, dysentery, 10, ophthalmia neonatorum, 135 No case of cholera, plague or typhus fever was notified during the week

Deaths—In the aggregate of great towns including London there were no deaths from small-pox, 4 (0) from enteric fever, 52 (0) from measles, 2 (0) from scarlet fever, 86 (16) from whooping-cough, 30 (10) from diphtheria, 44 (15) from diarrhœa and enteritis under two years, and 342 (33) from influenza

Small-pox in Scotland—At the beginning of the week the number of small-pox cases reported in Dundee amounted to 33, and extra accommodation was being arranged for at the small-pox hospital

The Services.

ROYAL NAVAL MEDICAL SERVICES

Surg-Lt C R Boland to *Widgeon*

ROYAL ARMY MEDICAL CORPS

War Office appointment—Maj C J Coppinger to be Asst Dir of Pathology, vice Lt-Col and Bt-Col A. E Hamerton

Maj J. H Robinson to be Temp Capt, and relinquishes the rank of Maj

Capt J W Malcolm is restd to the estabt.

Capt E M Townsend to be Maj (Prov)

Henry A Ferguson to be temp Lt

Hygiene Companies—Capt J B McGovern to comd the 7th (Southern) Hygiene Co

MILITIA

Majs L W O Taylor and G F Y Leary relinquish their commns, and retain the rank of Maj

Maj T. Walker relinquishes his commn, and retains the rank of Maj

ROYAL AIR FORCE.

Flight-Lt L C Palmer-Jones is granted a permanent commission in this rank.

Correspondence.

"Audi alteram partem"

VACCINATION AND ENCEPHALITIS

To the Editor of THE LANCET.

SIR,—As one who has performed vaccination on well over 22,000 occasions during the last 43 years, I was much interested in reading your article (March 19th, p 619) on Acute Disease of the Central Nervous System associated with Vaccination In my early days vaccination was carried out with no aseptic precaution, arm-to-arm vaccine was used, and no dressing was applied—unless by an "experienced neighbour" who advised the application of bacon fat, goose grease, or some other irritating unguent I saw many bad arms in those days Later I employed commercial lymph, which proved very irregular in action, sometimes intensive, sometimes abortive At this stage a dressing of boric lint was applied, and the violent reactions were much *diminished* During the last 30 years the operation has been carried out under strict aseptic rules with fresh Government lymph, and the result has been excellent

I have therefore witnessed vaccination carried out in all its various methods, and I can emphatically state that I have never seen a sequela resembling encephalitis in any of its forms Encephalitis lethargica is, as the article states, a comparatively new disease; but had such symptoms followed vaccination in the earlier period of the century, I have no hesitation in saying it would have attracted the attention of the dullest practitioner Bastiaanse gives a clue to the suggested association He and others state that "during February, March, and April, 1925, *about 122,000* persons were vaccinated, and 24 cases of postvaccinal encephalitis occurred", but during the other nine months of the year 151,000 persons were vaccinated, and only seven cases occurred, Surely this points to a seasonal cause, and has no relation to vaccination? Again Bastiaanse admits that the cases did not conform to the usual type of encephalitis lethargica since the onset was more sudden (? previous infection) and the after effects varied

I submit that the cases reported were already infected prior to vaccination

I am, Sir, yours faithfully,
BOUVERIE F P MCDONALD, M D
Wallasey, March 27th, 1927.

OPHTHALMIC BENEFIT

To the Editor of THE LANCET

SIR,—Sooner or later we all have to think about wearing glasses, and are most grateful when medical confreres kindly prescribe them for us, but it is a fact that only *ourselves and our* wealthier patients on the one hand, and hospital patients on the other, are in a position to take advantage of this exceptional skill Is there not then, a wide field for those services by trained opticians so definitely supported by Mr Adrian Caddy, and yet as harshly scorned by Dr Alex Lumsden in recent issues of THE LANCET?

This question of efficient sight-testing is very important to all of us who in general practice—visiting or consulting—*are being* asked for directions about it almost daily Mr Caddy *says that* "the opticians in 80 per cent of cases *prescribe* correct glasses and give their patients satisfaction", but Dr Lumsden holds that this figure is "pure assumption and therefore valueless"

What is the truth about this? It is far too serious a matter to be left thus uncertain, and I am wondering how many fellow-practitioners will agree with me that there is considerable dissatisfaction amongst patients at the expensive services of ophthalmic surgeons, and not too certain results obtained in this particular branch of ophthalmic practice Also I should be interested to know if there are other medical men who, like myself, know of many patients who have been perfectly well-suited by opticians at moderate cost As to the danger of serious organic eye disease being maltreated through patients having their "eyes tested" outside specialist circles, surely as a practical matter this is very small, the patient with glaucoma, new growth, or cataract, for example, will *almost certainly consult a doctor* just as soon if he goes to an optician as if he does *not*

I am, Sir, yours faithfully,
E L HOPEWELL-ASH, M D
Grosvenor-street, W, March 27th, 1927

To the Editor of THE LANCET.

SIR,—I have read with great interest the letter of F.R.C S Oculist on this subject in your issue of March 12th The reasonable tone of the letter leads me to think that the writer, and many other members of his profession, would be prepared to hear the ophthalmic opticians' case.

The contention is advanced that the training of the ophthalmic optician is inadequate It is true that it requires six years *or more to* obtain a medical degree, whereas the modern *optometrist's* training occupies only one half of that period He takes a two years' full-time college course and attends one of the refraction hospitals for a minimum of one year. In addition, the optical student has to pass an entrance examination to the college and to matriculate, or pass a similar examination before qualifying He also takes examinations for his college and hospital certificates, besides those for his qualification diplomas. I would, however, make a few observations in this connexion

1 The course of study of the non-medical refractionist is of a highly specialised nature. It is a fact *that he takes general anatomy*, physiology, histology, embryology, pathology, &c, but much more time is devoted to the study of the eye and its connexions, and to physical and physiological optics, than is the case in the medical curriculum

2 His education is naturally of shorter duration than that of the medical student, as *all treatment*, other than refractive (in which he recognises no higher authority), is outside his sphere His function ends with the *recognition* of general or local pathological conditions The number of drugs which he employs in his practice is small, and he is not required to possess the wide knowledge of materia medica of the physician.

3 The conscientious ophthalmic optician is not satisfied when he has *completed* his three years' training and passed all his examinations He realises the vastness of the fields of investigation and research before him He continues to attend a refraction hospital, and lectures arranged by his local and central associations, and to steadily enlarge his library.

4 His experience is also af a specialised *character*. The general medical practitioner, who practises refraction, may see two or three eye cases a week. The optometrist sees 20, 30, or even more He thus becomes increasingly expert in the use of his instruments and can, and does, readily detect any departure from normality. To instance one important detail; he is so familiar with the variations in normal fundi that he immediately recognises any indication of a general or local pathological condition

F.R C S Oculist makes special mention of glaucoma. This disease, insidious in its incipient stages, probably causes more sleepless nights to refractionists than any other Its importance, is, however, duly emphasised both in his training and his examinations. He is, by the instruction he receives and the practice he *obtains, skilled in the* manipulation of the ophthalmoscope, perimeter scotometer, &c, and appreciates the significance of his findings One refractionist has invented a very useful instrument for detecting the relative scotoma of glaucoma Two other optometrists have carried out some valuable investigations and have devised a very useful method of differentiating between a physiological and glaucomatous halo

F R C S Oculist states that there is no parallel between the optical and dental professions The former is now in a very similar position to that occupied by the latter before passing of the Dental Acts, which, incidentally, received some opposition from medical men Before the establishment of the Dental Register, many inadequately trained and unqualified men were in practice To-day, men who have never used a retinoscope, perimeter, scotometer, phorometer, or keratometer, and have never seen a fundus outside a text-book, are permitted to designate themselves " ophthalmic opticians," " optometrists," or " refractionists," and to represent themselves as qualified to conduct a satisfactory ophthalmic examination It is regrettable that many ophthalmic opticians still retain shop premises It is hoped that this practice will shortly cease

Your correspondent further states that " opticians should not be allowed to test the eyes and supply the glasses as well " Would he also affirm that a physician who dispenses should not be permitted to prescribe drugs, or a dental surgeon to extract the teeth and supply the dentures ? The public, and especially members of kindred professions, appreciate the amount and quality of the services rendered, without payment, by members of the medical profession, at hospitals The profession has earned the esteem of all sections of the community by the way in which its members have carried out this work Ophthalmic opticians are, however, doing similar work. The refraction hospitals are staffed by voluntary workers One refractionist of my acquaintance travels weekly from Bournemouth to London, in order to assist in the work of the London Refraction Hospital, all service and expenses being gratuitous

The suggestion that optometrists should go out of practice is unreasonable and impossible I give two of the many reasons for this statement (1) The non-medical refractionist has spent the best years of his life, and several hundreds of pounds on his training He has served the community well It would be unthinkable to deprive him of his livelihood (2) Optometrists have been examining eyes and prescribing ptical corrections for over 300 years They have one much to make the public " eye-conscious " and o improve the instruments and apparatus which they employ Medical men have only practised refraction, to any extent, for a comparatively short period

The public interest demands a speedy and satisfactory solution to the problem under discussion This can be found by legally recognising the optical profession and thus ensuring, in the future, that every practitioner receives adequate training and passes suitable examinations before being permitted to practise —I am, Sir yours faithfully

E C Dupont F B O A (Hons)

Chobham road Woking, Surrey, March 23rd, 1927

To the Editor of The Lancet

Sir —The letters of Mr Adrian Caddy and Mr A G Lumsden in The Lancet (Feb 26th and March 5th respectively) represent almost extreme views on the ophthalmo-optical position

It would appear that Mr Caddy's so-called absence of esprit de corps is due to his lack of dogmatism As correction of many of the statements made by Mr Lumsden would be to general advantage, your kindness in publishing this letter will be appreciated

Although deploring Mr Caddy's vagueness, Mr Lumsden does but " suggest " that " perhaps " Mr Caddy will agree that the modern refractionist is so basely commercial that each client entering his establishment is looked upon as a " sale " instead of a " case " and that none pass out of his doors without being financially the poorer

I regret that Mr Lumsden should display so marked a degree of ignorance on the current position or reveal the type of " optician " with whom he is acquainted, but it is a rule of professional etiquette and a scientific principle that before sweeping statements are made the " facts " on which the statements are based shall at least be verified If Mr Lumsden (or any other so desirous) cares to visit—not the shop—but my consulting-room he will find that in no cases are glasses supplied unnecessarily, or cases, observed to be outside the refractionist's legitimate realm, fail to be referred to the proper authority I have yet to be informed of a patient who has privately consulted an oculist without charge, whatever their refractive condition

It is unfortunate that these two realms of ophthalmology—the medical and the physical, as it were—which should be cooperative, tend to be opposed, for no other reason, apparently, than *£ s d.* Yet I fear that Mr Lumsden has touched on a disastrous field when he mentions the " formidable list " of errors which he could compile from his case-book We also have case-books, and if Mr Lumsden were to furnish some representative cases of " errors " I could supply error for error ad infinitum—provided that only cases by properly qualified men on both sides were cited ; but this ocular sword of Damocles would be of little service in harmonising the two and would be very like " the pot calling the kettle black "

Dictionaries are not text-books but adjuncts to them, and it is dangerous to quote from them In Murray's Dictionary the definition of an oculist is " one versed in the knowledge *or* treatment of eyes," from which it would be possible to infer that in order to conform to this an oculist must either know without treating or treat without knowing ! But no mention is made that a knowledge of the instruments of treatment is necessary, and again a " formidable list " could be produced, such as ordering decentred plano-cyls along their axes with a worked prism in the same direction, &c

Mr Lumsden's ideal method is for the wealthy to go privately to the uncommercial oculist and the unwealthy to go to the same oculist at the hospital This is far from ideal (apart from being impossible), and I sympathise with the harassed oculist who arrives at the hospital clinic to find himself faced with the problem of carrying out anything from 6 to 18 refractions within about two hours Incidentally the end of the two hours usually finds each patient supplied with a prescription and a weary band wending their cycloplegic way to the " optician," who has oft to respond to the appeals of busy clients surprised at the prospect of many hours to come under cycloplegia, by the instillation of eserine or the hasty assembling of the nearest available near vision correction for temporary use

Finally, to balance Mr Lumsden's case of the tailor wearing lenses suitable for compound myopic astigmatism and who required O D + 0 50 ⊂ + 3 50 cyl axis 70° (or was it + 4 00 ⊂ − 3 50 cyl axis 160° ?) I recently examined a young lady of 22 years of age who had been suffering from frontal-parietal-occipital cervical headaches, and had been treated by a medical practitioner with mustard poultices, but to no avail She was almost emmetropic and orthophoric, the only apparent ocular defect being a 15 ° concentric contraction of both fields I referred her to an M.B F R C S , registered on the M O H list of ophthalmic surgeons who, after perusing my full report and examining the patient himself, supplied an almost identical prescription and replied that as he could find no evidence of glaucoma he was unable to account for the constriction of the fields

Will not the solution of these problems be rather by cooperation than by contradiction ?

I am, Sir, yours faithfully,

Sidney H Southgate, F B O A (Exam.)

Horsington House, Woking, March 14th, 1927

To the Editor of The Lancet

Sir,—The recent correspondence in The Lancet concerning ophthalmic benefit for insured persons proves of added interest in consideration of the projected new Bill suggested for the registration of sight-testing opticians. Your issue of Feb. 12th gives a résume of the proposed *Parliamentary Bill.*

Having investigated the status and methods of the registered opticians (optometrists) in the Colonies, I have come to the conclusion that over there, as in Britain, there are many defects in the training and abilities of even the best sight-testing opticians My conclusion is that they are not yet in a fit position to be recognised by this Government and the nation to prescribe lenses for uncomplicated errors of refraction Different conditions in the Colonies necessitate a changed attitude in dealing with errors of refraction amongst the public. The opticians would like to go so far as to make it compulsory for everyone to possess at least two pairs of glasses, one to stimulate the eyes and the other to rest the eyes What would be the result of registration of opticians ? In the first place a tremendous advertising campaign would ensue, such as this country has never seen before, to blaze the information that spectacles alone are able to prevent and cure all diseases of the eye

It is well known that the various organisations and associations of sight-testing opticians are at bitter enmity amongst themselves concerning the opinions they hold of their relative importance To the most casual investigator it is patent that a big cause of this enmity has resulted from quarrels over matters of finance.

One of the leading organisations amongst sight-testing opticians is known as the Joint Council of Qualified Opticians This autocratic body has despotic control over many opticians in England and Wales Named in short the J C Q O (it is a limited company) its chief means of control and domination over its members is that it acts as a financial intermediary between the approved societies or insurance companies and the sight-testing opticians An entrance fee is necessary to join the J C Q.O , an annual subscription is required, and 2½ per cent of all the money paid by the insurance companies for spectacles is deducted as expenses A further percentage is deducted in order to finance the huge advertising campaign which tells us that sight is might and that those opticians who portray the golden eagle in their windows are specially endowed with powers to give glasses to suit all sights or to treat failing sight

It is worthy of note here to remark that the insurance companies allow a testing fee of 5*s* to the optician for every case for which spectacles are supplied The immediate and ultimate desire of the optician is to sell glasses whether necessary or not at the highest possible figure There is no suggestion that this projected registration would put an end to indiscriminate advertising or break up the big profiteering trusts who run multiple shops The optician of to-day now adopts more than ever the attitude of the "dog in the manger" Until a few months ago all insured persons were seen without fee at the hospitals, but, nevertheless, the optician always obtained his profit on the spectacles sold Since the introduction of ophthalmic benefit the optician is very annoyed because he does not invariably receive the testing fee of 5*s* in addition to the profit derived from the spectacles sold Whenever possible the patient is side-tracked from going to visit an ophthalmic surgeon, and for the many doubtful cases the slogan is "Supply some lenses and hope for the best"

The optician is ploughing a lone furrow when he broadcasts to the public that the simple wearing of spectacles will cure all diseases of the eye Reference to the file cards and notes of any ophthalmic surgeon concerning any number of cases taken at random will demonstrate that for the diagnosis and correct interpretation of most diseases of the eye, a knowledge of the function and pathology of the whole body is necessary The relationship between disorders of the eye and the accompanying disorders in the nervous system needs no emphasis· as an example the differential diagnosis of the types of arterio-sclerosis of the retinal vessels, the investigation of partial amblyopias, cases of retrobulbar neuritis. and the ocular defects in such diseases as disseminated sclerosis or tabes dorsalis, belong to the domain of the ophthalmic surgeon alone For the optician to pose before the public as being able to diagnose abnormal conditions of the eye from the medical point of view is an insult to the intelligence of the general public. The optician of to-day is lacking both in scientific ability and experience, and should not be trusted as competent to preserve the vision of the nation.

To emphasise the mistakes constantly made by opticians I will quote three recent cases —

1 A middle-aged lady complaining of misty vision had her glasses changed by an optician three times within six months A diagnosis of subacute iritis with a deposit in anterior chamber as made by an ophthalmic surgeon on first visit After extraction of teeth the condition improved considerably

2 A child, aged 3, treated by an optician for long sight, was found on visit to oculist to have a retro-ocular tumour, and excision of the eye was necessary.

3 A male, aged 50, complained of increasing dimness of vision, and was seen several times by an optician without diagnosis being made On finally going to hospital a diagnosis of early optic atrophy was made, and the patient advised accordingly.

The average optician of to-day devotes too much attention to the commercial side. In contrast with the sight-testing opticians is the National Association of Dispensing Opticians, which represents the dispensing opticians of the country. who carry out most excellent work in arranging for the fitting and decentring of the lenses given in the prescription of the ophthalmic surgeon.

Those opticians pressing for State recognition do not mention incidentally that any individual with a knowledge of salesmanship can learn enough about eye glasses in a space of ten hours to call himself a fully qualified optician What the public does not know, however, is that a period of at least ten years' specialised medical training and surgical experience is necessary before commencing the career of an ophthalmic surgeon

I am, Sir, yours faithfully.

March 26th, 1927 OPHTHALMIC SURGEON

*** The intention of the Minister of Health to set up a Committee to inquire into the question of registering opticians makes it necessary that our readers should be informed on all sides of the subject —ED. L.

VENEREAL DISEASE IN THE MERCANTILE MARINE

To the Editor of THE LANCET.

SIR,—The letter of Dr. L L Burton of New Zealand in your issue of March 26th seems to show that the Government and Port Authorities of New Zealand have not carried out the recommendations contained in the Report (Series P. Seamen No 2) entitled Protection of the Health of Seamen against Venereal Disease, published by the International Labour Office of the League of Nations, Geneva, in July, 1926

The Report was drawn up by a Joint Commission consisting of five representatives of shipowners five representatives of seamen, and two members of the governing body of the International Labour Office. and recommended that the circular published by the British Shipping Federation should be forwarded to various shipowners' and seamens' organisations This circular recommended (1) "the dissemination amongst seamen of exact knowledge of the prevention and cure of venereal diseases," and (2) "the distribution at cost price to seamen of the requisite materials for prevention by immediate self-disinfection" The circular stated that the British Shipping Federation would be prepared to supply suitable literature for gratuitous distribution amongst seamen including a lecture specially written for seamen by myself. The Report also recorded the opinions of various countries in regard to the prevention of venereal disease amongst seamen, such as:

Australia —"Most satisfactory means for the dissemination of exact knowledge amongst seafarers and for immediate self-disinfection have been adopted"

Belgium —"The Statutory Health Commission have approved a scheme giving wide facilities for the supply of disinfectants"

France —"A committee on the prevention of venereal disease has been set up in *connection with the Ministry of* Health and Social Welfare"

Germany —"Shipowners are required to distribute preventive medicines to seamen"

Poland —"The Ministry of Public Health was planning to publish prescriptions in order to enable the population of the ports to avoid infection from venereal disease"

Sweden —"A Royal Ordinance was in preparation prescribing that all ships must keep in stock certain kinds of medicine and other medical articles for the prophylactic and curative treatment of venereal disease"

The protection of the health of seamen against venereal disease is an important part of the general antivenereal campaign The education of seamen in the prevention of venereal disease by immediate self-disinfection is, however, still opposed by a fanatical section of the community who have always obstructed such education of the public However authoritative the body issuing the pronouncements on the subject and however wise and logical their recommendations may be the history of the past ten years makes it clear that the problem will not be seriously grappled until the conspiracy of silence has been finally exposed, and killed by the ridicule it deserves

I am, Sir, yours faithfully,

H WANSEY BAYLY,
Hon. Sec, S P V D

Harley-street, W, March 25th, 1927

THE INCIDENCE OF LEAD POISONING

To the Editor of THE LANCET

SIR,—One of your readers at least, who lives abroad, is particularly grateful to you for the full reports of Parliamentary intelligence which you print from week to week The great value of publicity in matters of social medicine is well illustrated by the debate on lead poisoning which you print in the March 5th issue, just received I followed the controversy that was carried on under the able chairmanship of Lord Burnham from day to day, and can testify to the truth of his contention that immense pressure was brought to bear on the conference by the two industries whose interests were involved The only safeguard against the pressure of vested interests is a full ventilation of facts—and bearing in mind that the interests in Great Britain are predominantly those of the white lead industry the British medical profession should be especially informed of all the facts presented by both sides in a conference where both interests are strongly represented It is for this reason that I still regret the exclusion of your correspondent from the sittings of that particular subcommittee in Geneva when the strictly medical evidence was under scientific consideration The matter is not unimportant If it be agreed that the mortality and morbidity due to lead poisoning are preventable, we must not rest until the appropriate legal measures of prevention have been found May you continue by your good offices to hasten that day

I am, Sir, yours faithfully,

P B P

Ohio, March 19th, 1927

ROYAL WATERLOO HOSPITAL —It was stated at the annual court of the Royal Waterloo Hospital for Children and Women, Waterloo-road, London, that the extension now being built would, when opened at the end of May, provide six beds for paying patients, while a further 12 cots would be made available by the transfer of the operating theatre from the old building to the new There are at present 110 cots and beds Arrangements are being made for the equipment of an orthopædic department

SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

MEDICAL, DENTAL, AND PHARMACY BILL.

THAT hardy annual the Medical, Dental, and Pharmacy Bill was once more submitted for second reading in the Union House of Assembly in February

Dr. Malan (Minister for Health), speaking in Afrikaans, said that the Bill was of so urgent a nature that its passage should be no longer delayed It had become urgent first of all from an administrative point of view Medical services in general throughout the Union should be uniform, but to-day the position was that every Province had its own Medical and Pharmacy Acts, with the result that there were at present 16 Medical Acts requiring to be administered by his department Since the Bill was first introduced two medical faculties had been established in South Africa It was essential that the medical profession and the medical faculties should stand in properly defined relation towards each other Another essential point was that the trade in poisons should be brought under proper legal control It had been said that there was no country in the world where it was so easy for a person to become possessed of poisons as South Africa Dr Malan went on to point out the necessity for due protection being extended to dental practitioners who had been thoroughly qualified for their profession The dental mechanic was now really in a better position than the properly qualified man, who fell under the discipline of the Medical Council and was not allowed to advertise The Bill aimed at rectifying this unsatisfactory position The powers of the Medical Councils, as compared with the past, were to be curtailed The Councils would recognise degrees issued in South Africa, and also overseas In regard to the suspension and removal from the roll of persons found guilty of unprofessional conduct, an aggrieved person was given the right of appeal to the Supreme Court instead of to the Minister, as in the past The Minister went on to urge the necessity of a register of persons duly qualified under the Act being kept for the protection of the public Wherever the lives and the interests of the public were concerned, the persons entrusted with the care of such lives must be thoroughly qualified and duly registered. Regarding maternity nurses, the Bill made a great step forward In the past the heavy infantile mortality had been due largely to unqualified maternity nurses The number of qualified maternity nurses, especially in the rural areas, was insufficient, and such areas naturally had to be provided for The Bill laid it down that in certain specified areas nobody would be allowed to practise as a maternity nurse for remuneration unless properly certificated and registered Ninety five per cent of the Bill, said Dr Malan, was non contentious. The most contentious part of the Bill was Clause 34, under which no one not duly qualified would be allowed to practise "for gain," and the word "gain" was defined in the Bill The object was not to prevent a person from being doctored by an unqualified person, but to provide *that no* such unqualified person should be allowed to doctor another person for the purpose of gain Mr. P. Duncan (Yeoville) maintained that the Bill was urgently required in the interests of the public Mr Alexander (Hanover-street, Cape Town) said it was not what was *in the Bill that worried him, but what* was left out of the Bill He felt that drugless healers should receive some recognition in the Bill, provided they could prove that they had received a proper course of training in their particular professions Some of the most eminent men in the country, including the Prime Minister himself, had consulted drugless healers and benefited from their teachings He hoped the Minister would consent to exempt Christian Scientists from the restrictions imposed by the Bill He also pleaded that dental mechanics should be allowed to practise the purely mechanical side of the dental profession in a more unfettered fashion than at present Mr Mosterit (Namaqualand) opposed the Bill because it did not lay down a tariff of charges, and Mr Heyns (Middleburg, Transvaal) opposed it as a measure which would benefit nobody but the doctors The question of fixing doctors' fees was also raised The Minister of the Interior stated that the matter had engaged his attention for a considerable time, and he had at one time had a formula for inclusion in the Bill So great, however, had been the obstacles that he had left the matter alone Instead of ameliorating the position of the poor man, the fixing by law of doctors' fees would cause it to be aggravated, and many a doctor who charged a poor man a low fee would have to raise his charges Also one had to take into account the question of the specialist who was inundated with patients

The Bill was read a second time, and on Feb 14th the House of Assembly went into Committee on the Bill

The Medical Council—On Clause 2, dealing with the constitution of the Medical Council and Pharmacy Board, an amendment was moved to the effect that the Medical Council should be so constituted that the general public and the medical profession be equally represented, lest the medical profession should become too powerful a monopoly

The Minister of the Interior said there might be something in favour of this amendment, even if it only had the effect of removing suspicions which seemed to exist against the Medical Council He was prepared to accept the amendment in part so that the Minister would appoint to the Medical Council four medical practitioners and two persons not registered under the Act There would further be one dentist on the Council This amendment was agreed to The Bill was further considered in Committee on Feb 16th On Clause 24 Mr Heyns (Middleburg) moved the insertion of a proviso to the effect that a person who for five years before the commencement of the operation of the Act had practised as a doctor, and had taken fees for such practice, should be allowed to continue practising The Minister of Public Health declared the amendment to be in direct conflict with the principle of the Bill, and it was negatived Mr Steytler (Albert) moved the insertion of a proviso to the effect that any person not registered in accordance with the Act should be entitled to treat a person who had been abandoned by a medical practitioner and to charge for such treatment The amendment was negatived by 51 votes to 22

On Clause 34, dealing with penalties for practising as a medical practitioner when unregistered, Mr Alexander pleaded for the chiropractor, and moved the insertion of a proviso that nothing in the clause should apply to any drugless healer, who would have to prove to a Board that he was qualified to practise his particular form of healing On the following day the clause was further considered in Committee of the Assembly, and an animated discussion took place

The Minister of Public Health opposed the amendment, observing that the laws all over the world were being tightened up against drugless healers The Minister of Labour (Mr T Boydell) said that a refusal to pass the amendment would put the clock back 50 years by closing the door to new and modern methods of healing He heartily supported the amendment, which simply made provision for the recognition of qualified drugless healers He himself had received greater benefits from drugless healers than from medical men, and he refused to be compelled to go to the latter He was entirely opposed to the monopoly set up by the Bill Mr Duncan challenged the Minister of Labour to tell him any method of healing which had not been carefully inquired into by the medical profession Had the osteopaths and other people referred to ever tried to prove their methods scientifically, or ever submitted them to scientific tests ? He was not a believer in drugs, and he agreed that some medical men believed too much in applying drugs The amendment was eventually negatived by 53 votes to 24, and the clause was passed

Precaution against an Influenza Epidemic

Precautionary measures against an influenza epidemic are being taken by the Pretoria health authorities, who are advertising for persons willing to undertake nursing in the event of an outbreak. Dr Boyd, the M O H , does not anticipate a serious outbreak of influenza, but as influenza is prevalent in England at the present time, he has considered it wise to take precautionary measures, and to have a programme mapped out in event of such an outbreak An elaborate scheme for coping with an epidemic has been worked out in Cape Province

Outbreak of Cerebro-spinal Fever

An outbreak of cerebro-spinal fever in the Vredenburg district of the Cape Province, in the nature of an epidemic, is causing some uneasiness Some 30 cases have occurred during the last two months, a large proportion of them ending fatally

A Hospital Benefaction from Native Chiefs

A noteworthy illustration of the desire of the more advanced native chiefs to coöperate with Europeans in furthering their common interests is afforded by the action of two native chiefs in the Rustenburg area of the Transvaal They have contributed a sum of £700 towards the establishment of native wards at the new Paul Kruger Memorial Hospital which is being erected at Rustenburg Rustenburg has a population of 1733 whites and 960 natives, it is situated 70 miles from Pretoria, and 80 miles from Johannesburg

Government Hospital Inquiry

The Minister of Public Health has appointed a committee to inquire into and report upon certain matters connected with the hospitals and district nursing arrangements in the Union Sir Edward Newbury Thornton will preside, and the terms of reference are to inquire into and report upon the existing public hospital and district nursing accommodation and facilities in the Union, their adequacy and suitability or otherwise, their linking up and coordination by the utilisation of modern facilities for transporting the sick, and by other means with each other, and with institutions for dealing with cases of infectious or communicable diseases, and their future organisation, control, and development under the Provincial administration If deemed advisable by the committee, and with due regard to the existing hospital position and arrangements, the committee will submit recommendations as to the division of each Province into hospital areas, and as to the organisation and administration, including financial arrangements, of the hospital areas so defined , each area is to have at least one adequately equipped central hospital to link up with such subsidiary institutions, cottage hospitals, public dispensaries or clinics stations for district nurses, and so forth, as the committee may consider necessary for providing efficient and economical hospital and sick nursing service for both urban and rural areas

Pretoria's New Hospital

The general hospital shortly to be built in Pretoria will be one of the largest and finest institutions of its kind in the Union, being second only in size to the Johannesburg General Hospital Building plans have been completed the laying out of the grounds decided, and tenders called for the erection of the first block of buildings It is estimated that occupation will have to be deferred until early in 1929 A sum of close on £300,000 has been voted for the hospital There will be a total accommodation for 224 patients Special care is being taken in regard to the construction of a modern children's ward

MEDICINE AND THE LAW

THE HUME-SPRY CASE FURTHER CONSIDERED

"Good faith" and "reasonable care" These are plain words with plain meanings, surely, one might think, wide enough to give ample protection to the medical practitioner who with due regard to the formal requirements of the Lunacy Act signs a medical certificate That in the last resort these words may and do protect is evident from the highly satisfactory verdict given in the Hume-Spry *v* Smith & Another case abruptly concluded last week But that they do not protect the defendant medical practitioners, except where the action does not disclose a prima facie case of bad faith or lack of reasonable care, from a year or more of anxiety, waste of time, and loss of money is equally manifest Certain amendments of the law, discussed in THE LANCET last week, have been proposed, and in the meantime the medical issues of the case deserve careful attention The charge of bad faith appears to have been based on the fact that the defendants made no endeavour by independent inquiries to test the plaintiff's delusions There is no proof that it is the practice, which is not required by the Act, to make such independent inquiries, and, indeed, cases can easily be imagined—the present one, for example—in which such a search carried out by the medical practitioner might have unforeseen consequences and leave the inquirer himself in a very unenviable position An ethical point turns on a matter of great medical interest It will have been observed that an essential part of the medical evidence for the plaintiff was that reasonable care had not been exercised by the defendants because they had not made a physical examination of Mr Hume-Spry In varying degree this remarkable doctrine was supported by the plaintiff's expert witnesses, though one of them merely said that it was necessary to make a physical examination to exclude the possibility of the mental symptoms arising from some bodily illness All of this is quite immaterial in the certification of the insane, in which the medical practitioner is concerned solely with the mind and conduct of the person examined It seems at any rate possible that if greater weight had been given to these considerations more than a year ago when the order of the Master in Chambers staying this action was reversed by the Court of Appeal, the case would not have been allowed to go forward for trial by jury and much time, worry, and expense would have been saved On the other hand, it is probable that only trial by jury could have vindicated so completely the defendants and have so utterly dissipated the aspersions cast on several persons who had the misfortune to be involved

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MEDICAL SOCIETY OF MANCHESTER —Prof J S Haldane will on April 6th give an address to this Society entitled Biology and Medicine

LONDON FEMALE LOCK HOSPITAL —On March 23rd Lord Radstock opened a new operating theatre and genito-urinary department at this hospital, which is now in its 180th year Mr Charles Gibbs, senior surgeon, said that the hospital now became a complete unit It would be possible henceforward to deal with patients suffering from abdominal complications causing either chronic disease or immediate danger to life These had previously been transferred to Charing Cross Hospital, which had been regrettable scientifically because they were preferably treated at the hospital to which they came for treatment of their primary infection The new genito-urinary department would be able to deal with diseases coincident with venereal infection The ward would also be available for the more serious operative procedures of childbirth It was proposed to admit women who could not pay anything at all and also those who could afford to pay a small sum per week Until now there had been no place in London where poor women suffering from genito-urinary and allied diseases could be taken into hospital and treated for a small weekly payment Mr Gibbs made a special appeal for the gift of X ray equipment.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

THE CARE OF PHYSICALLY AND MENTALLY DEFECTIVE CHILDREN

ON Thursday, March 24th, the motion for the second reading of the Consolidated Fund (No 1) Bill,

Mr TREVELYAN said that the Board of Education ought not to be issuing economy circular after economy circular but ought to be dealing with black-listed schools There were 623 schools that had been absolutely condemned and which had not been replaced, they contained 160,000 children In making their list of really insanitary and unsatisfactory schools which could not be tolerated any longer the Board adopted a very moderate and merciful standard Yet there were 600 schools which had been absolutely condemned by any conceivable standard which they possessed They had been told that some provision had been made in the case of provided schools, but it was made quite clear that in the case of what must be the majority of these schools, mainly the non-provided schools practically nothing had been done The Board of Education could not play two rôles It could act as a department of the Treasury, and if economy was its primary motive education could not progress very much

Mr HARRIS said that in Circular 1358, dated March 31st, 1925, the President of the Board of Education said "My obligation is to ensure that every provision should be made for the ascertainment and treatment of children suffering from incurable infirmities, or infirmities the effect of which can in some measure be mitigated by special teaching, so that they may not become a permanent burden on the community to which they belong" Those were excellent sentiments in principle After the lapse of two years the right hon gentleman changed his attitude In his later Circular No 1388, dated February of this year, he had discovered that the whole subject needed inquiring into He said "In regard to the provision for mentally defective children, authorities will be aware that this very difficult problem is now being explored by a special committee and save in exceptional circumstances it would not seem desirable to incur any expenditure on new schools, and such children ought to be provided for in existing schools" What a pity the right hon gentleman did not think of that two years ago and appoint a committee of inquiry then

Lord E PERCY A committee was appointed by my predecessor

Mr HARRIS said the right hon gentleman ought to have been conscious of that when he sent out his circular in 1925 He suddenly remembered this committee in 1927 when he wished to make an excuse for discouraging local authorities from doing their duty in providing for these pathetic cases

Mr MORRISON said he wished to draw the attention of the President of the Board of Education to the question of the subnormal children in this country and the effects of his policy in regard to them during the past two years. Under the existing law local education authorities were required to make educational provision for all children who were defective and who were capable of benefiting therefrom. The figures given in the House nearly four years ago on this subject were very alarming, because they showed that many authorities were not carrying out the law A good deal of pressure was brought to bear on the Board of Education and Mr TREVELYAN, who was then President of the Board, issued Circular 1341 dealing with special schools for mentally defective children in which he pointed out that "the problem is too urgent to be left till it is solved in its entirety in the manner which the Statutes contemplate, and which alone can provide a satisfactory solution" According to the official figures there were 2000 blind children in this country and of those there were 262 who were not attending any school at all, and 63 who were attending public elementary school That was an extraordinary state of affairs, and seemed to be not only a waste of money, but also a very serious handicap on the teachers The total of the children who were partially blind was 4692 and out of that number 2069 were in public elementary schools and 339 were not attending any school at all If it was possible to do such wonderful work as had been done for the soldiers blinded in the war at St Dunstan's, the same specialised training applied to the partially blind children would produce even more wonderful results, because the institutions would get hold of the children at a much younger age Experience indicated that 50 per cent of those trained in special schools for blind children could be equipped to earn a useful livelihood Surely the President of the Board ought to try to extend that work instead of hindering it With regard to deaf children, it had been ascertained that there were 4154 totally deaf children in this country and of those 319 attended ordinary schools They were stone deaf, and 247 were not attending any school at all At the annual meeting last week of the National College of Teachers a resolution was passed viewing with apprehension the possible consequences to deaf children involved in the circular issued by the Board of Education They said that these deaf and partially deaf children if they did not receive a specialised education, were frequently taken to be insane later in life, when they were not really insane at all There were 2170 partially deaf children in this country and 1632 of those were in ordinary schools and 80 were not in any school at all These figures were underestimated With regard to physically defective children including cripples, those suffering from tuberculosis and delicate children who required open-air schools, the official figures showed a total of 142,889, and of these 94,332 were in public elementary schools and 18,931 were not in any school That showed that there were 113,263 physically defective children not receiving the specialised education which their disability required, and whose chances of earning a living were seriously endangered thereby Economical proposals applied to physically defective children in the way suggested was a penny wise and pound foolish policy Mentally defective children were referred to in Circular 1388, which showed that out of 33,000 mentally defective children in England and Wales 12,470 were attending elementary schools who should not be there at all Included in the 33,000 there were 3872 who were educable, but who were not attending any school at all There were still 110 authorities who had made no provision for teaching these children, although they could be compelled by law to make such provision The circular issued by the Board of Education was really the meanest form of economy that the mind of man ever conceived The records of the existing schools for mentally defective children showed that from 60 to 70 per cent of these children were at work two years after leaving those schools He wished to know whether the suggestion behind this circular was that there should be nothing further done by local authorities to provide for mentally defective children, or was the suggestion that the Board of Education officials were working out some new idea under which the mentally subnormal children should remain in schools for defectives until they were 11 years of age? Any such suggestion would mean an entire reconsideration of the question of staffing The presence of these children in the ordinary classes hampered the progress of the normal children Out of the 33,000 educable mentally defective children in England and Wales on March 31st last only 17,154 could be accommodated The effect of the official circular would be to hold up indefinitely all provision for dealing with one of the most urgent and serious educational and social problems which they had to deal with at the present time The doctors of the School Medical Service could never do the work of the teacher, so far as mentally defective children were concerned

Lord E Percy (President of the Board of Education) replying to the debate, said that the fact that the blind children were not attending special schools was due, in the main, either to the unwillingness of the parents to have their children placed in these schools, or to the children having arrived at an age at which the obligations to attend the schools no longer held good The real main problem of the mentally and physically defectives at the present moment was that there were areas where there were only a few defective children and not enough for a special school They could only be dealt with either by having a class in connexion with an elementary school, or by sending them to a residential institution After all, the parents had something to say about their defective children, and it was not always easy to deal with them for that reason That these special schools were able to do some work he did not deny, but that the children became self-supporting, or that the schools were necessarily on the best lines for the good of the children was a very grave question The powers of compulsion which the Board possessed in regard to mentally defective children constituted the gravest responsibility which the Board had got, and if they dealt with those children wrongly it might be better that they had never dealt with them at all Great play had been made in the debate about the mysterious committee on mental deficiency, as if it had been suddenly revealed But if hon Members had ever read the reports on the health of school-children by the Chief Medical Officer of the Board of Education for 1924 they would have found on page 145 a long footnote explaining the composition of that committee and a considerable passage in which its object was explained Teachers were not excluded from it, and one member of the committee was Miss Redfern, the headmistress of a residential school for mentally defective children. As regards the question of the black-listed schools the noble lord said that the bulk of the provided schools would be dealt with by the end of the programme period, and without laying down a hard-and-fast date for the termination of recognition, he thought that every local authority should proceed on the assumption that all the A schools on the list, and the bulk of the B schools, should have been dealt with by the beginning of the school year—that meant September, 1930 The position in regard to the non-provided schools was not quite so clear, but he did not think that the progress up to date had been unsatisfactory The managers of non-provided schools had to face many difficulties

Mr Morgan Jones said that in reading the report presented by Sir George Newman recently, he noticed that he said that in 1900 there were 142,912 children under the age of 11 who died In 1921 that number had been substantially reduced but it was still colossal, it was reduced to 112 906 In 1925 it was still 96,669 Out of that figure 81,080 were children under 5 That was a staggering and alarming figure, and it entitled them to urge that some additional provision should be made to bring these younger children, at any rate at the age of 4 or 5, into some form of nursery school where their physique as well as their moral training might be more amply looked after According to the report of the medical officer of the London County Council, Dr Menzies, there were 10,000 children who had suffered, or were suffering from rheumatic symptoms Very substantial work had been done in this department, but, having regard to the effects in later life of this disease, there was a strong case for the intensification of the medical service attached to the educational service throughout the country

The Duchess of Atholl (Parliamentary Secretary to the Board of Education) said that everyone who had read the report of the medical officer on the health of young children must feel grave concern at the figures given with regard to children under 5 years of age The nursery schools were doing splendid work in improving the health and general training of young children But they did not look for health in this matter from nursery schools alone They also recognised the valuable work done by day nurseries and the extent to which voluntary effort had contributed to this task With the present financial difficulties with which the country was faced anyone responsible for educational administration would welcome every help that voluntary effort could give Rheumatism was another disquieting feature disclosed in the principal medical officer's report She could assure the House that children suffering from heart trouble caused by rheumatic affection were to an increasing extent being admitted to the physically defective schools and a very welcome feature of the problem of the physically defective child was that in some areas—thanks to the provision of orthopædic treatment for the crippled child, which if given at a sufficiently early age, offered hope of a real cure—they were finding that increasing space was being found for the rheumatic children, or children with affected hearts, in schools originally intended for the crippled child She thought they were doing something in an ever-increasing degree to meet the unhappy case of these children

The Bill was read a second time

HOUSE OF LORDS

Wednesday, March 23rd

Air Force Accidents

Lord Gorell called attention to the frequency of accidents in the Royal Air Force He said that the Secretary of State for Air had said that there were 58 fatal accidents in the Force last year That was an average of more than one a week, and only in the previous week there were some more. The recent statement by the Prime Minister had not entirely removed all the sense of uneasiness on this question Most of these accidents occurred, as far as could be known from certain definite causes He thought that it was admitted that the "stalling" of a machine, especially when it was near the ground, was at any rate a very frequent cause of these accidents He found among the technical experts criticism of the Air Ministry for having been rather dilatory in testing and possibly applying safety devices He did not associate himself with those criticisms, but he would like further information on the matter

The Duke of Sutherland (Paymaster-General), replying for the Air Ministry, said that from some criticism which had recently appeared in the Press, and had even been heard in the House of Commons, it might almost be supposed that the Air Ministry kept no proper record or statistics, but simply accepted the accidents as necessary concomitants of aviation It might even be supposed that the Air Ministry made no real endeavour to reduce the number of these accidents Nothing was further from the truth The Prime Minister had satisfied himself that the fullest statistics had been kept since the war and that the whole

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"Good faith" and "reasonable care" These are plain words with plain meanings, surely, one might think, wide enough to give ample protection to the medical practitioner who with due regard to the formal requirements of the Lunacy Act signs a medical certificate That in the last resort these words may and do protect is evident from the highly satisfactory verdict given in the Hume-Spry *v* Smith & Another case abruptly concluded last week But that they do not protect the defendant medical practitioners except where the action does not disclose a prima facie case of bad faith or lack of reasonable care, from a year or more of anxiety, waste of time, and loss of money is equally manifest Certain amendments of the law, discussed in THE LANCET last week, have been proposed, and in the meantime the medical issues of the case deserve careful attention The charge of bad faith appears to have been based on the fact that the defendants made no endeavour by independent inquiries to test the plaintiff's delusions There is no proof that it is the practice, which is not required by the Act, to make such independent inquiries, and, indeed, cases can easily be imagined—the present one, for example—in which such a search carried out by the medical practitioner might have unforeseen consequences and leave the inquirer himself in a very unenviable position An ethical point turns on a matter of great medical interest It will have been observed that an essential part of the medical evidence for the plaintiff was that reasonable care had not been exercised by the defendants because they had not made a physical examination of Mr Hume-Spry In varying degree this remarkable doctrine was supported by the plaintiff's expert witnesses, though one of them merely said that it was necessary to make a physical examination to exclude the possibility of the mental symptoms arising from some bodily illness All of this is quite immaterial in the certification of the insane, in which the medical practitioner is concerned solely with the mind and conduct of the person examined It seems at any rate possible that if greater weight had been given to these considerations more than a year ago when the order of the Master in Chambers staying this action was reversed by the Court of Appeal, the case would not have been allowed to go forward for trial by jury and much time, worry and expense would have been saved On the other hand, it is probable that only trial by jury could have vindicated so completely the defendants and have so utterly dissipated the aspersions cast on several persons who had the misfortune to be involved

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Lord E PERCY A committee was appointed by my predecessor

Mr HARRIS said the right hon gentleman ought to have been conscious of that when he sent out his circular in 1925 He suddenly remembered this committee in 1927 when he wished to make an excuse for discouraging local authorities from doing their duty in providing for these pathetic cases

Mr MORRISON said he wished to draw the attention of the President of the Board of Education to the question of the subnormal children in this country and the effects of his policy in regard to them during the past two years Under the existing law local education authorities were required to make educational provision for all children who were defective and who were capable of benefiting therefrom The figures given in the House nearly four years ago on this subject were very alarming, because they showed that many authorities were not carrying out the law A good deal of pressure was brought to bear on the Board of Education and Mr TREVELYAN, who was then President of the Board, issued Circular 1311 dealing with special schools for mentally defective children in which he pointed out that "the problem is too urgent to be left till it is solved in its entirety in the manner which the Statutes contemplate, and which alone can provide a satisfactory solution" According to the official figures there were 2000 blind children in this country and of those there were 202 who were not attending any school at all, and 63 who were attending public elementary schools That was an extraordinary state of affairs, and seemed to be not only a waste of money, but also a very serious handicap on the teachers The total of the children who were partially blind was 1692 and out of that number 2069 were in public elementary schools and 339 were not attending any school at all If it was possible to do such wonderful work as had been done for the soldiers blinded in the war at St Dunstan's the same specialised training applied to the partially blind children would produce even more wonderful results, because the institutions would get hold of the children at a much younger age Experience indicated that 50 per cent of those trained in special schools for blind children could be equipped to earn a useful livelihood Surely the President of the Board ought to try to extend that work instead of hindering it With regard to deaf children, it had been ascertained that there were 4154 totally deaf children in this country and of those 319 attended ordinary schools They were stone deaf, and 247 were not attending any school at all At the annual meeting last week of the National College of Teachers a resolution was passed viewing with apprehension the possible consequences to deaf children involved in the circular issued by the Board of Education They said that these deaf and partially deaf children if they did not receive a specialised education, were frequently taken to be insane later in life, when they were not really insane at all There were 2170 partially deaf children in this country and 1632 of those were in ordinary schools and 80 were not in any school at all These figures were underestimated With regard to physically defective children including cripples, those suffering from tuberculosis and delicate children who required open-air schools, the official figures showed a total of 142,889, and of these 94,332 were in public elementary schools and 18,931 were not in any school That showed that there were 113,203 physically defective children not receiving the specialised education which their disability required, and whose chances of earning a living were seriously endangered thereby Economical proposals applied to physically defective children in the way suggested was a penny wise and pound foolish policy Mentally defective children were referred to in Circular 1388, which showed that out of 33,000 mentally defective children in England and Wales 12,470 were attending elementary schools who should not be there at all Included in the 33,000 there were 3872 who were educable, but who were not attending any school at all There were still 110 authorities who had made no provision for teaching these children, although they could be compelled by law to make such provision The circular issued by the Board of Education was really the meanest form of economy that the mind of man ever conceived The records of the existing schools for mentally defective children showed that from 60 to 70 per cent of these children were at work two years after leaving those schools He wished to know whether the suggestion behind this circular was that there should be nothing further done by local authorities to provide for mentally defective children, or was the suggestion that the Board of Education officials were working out some new idea under which the mentally subnormal children should remain in schools for defectives until they were 11 years of age? Any such suggestion would mean an entire reconsideration of the question of staffing The presence of these children in the ordinary classes hampered the progress of the normal children Out of the 33,000 educable mentally defective children in England and Wales on March 31st last only 17,154 could be accommodated The effect of the official circular would be to hold up indefinitely all provision for dealing with one of the most urgent and serious educational and social problems which they had to deal with at the present time The doctors of the School Medical Service could never do the work of the teacher, so far as mentally defective children were concerned

Lord E Percy (President of the Board of Education) replying to the debate, said that the fact that the blind children were not attending special schools was due, in the main, either to the unwillingness of the parents to have their children placed in these schools, or to the children having arrived at an age at which the obligations to attend the schools no longer held good The real main problem of the mentally and physically defectives at the present moment was that there were areas where there were only a few defective children and not enough for a special school They could only be dealt with either by having a class in connexion with an elementary school, or by sending them to a residential institution After all, the parents had something to say about their defective children, and it was not always easy to deal with them for that reason That these special schools were able to do some work he did not deny, but that the children became self supporting, or that the schools were necessarily on the best lines for the good of the children was a very grave question. The powers of compulsion which the Board possessed in regard to mentally defective children constituted the gravest responsibility which the Board had got, and if they dealt with those children wrongly it might be better that they had never dealt with them at all Great play had been made in the debate about the mysterious committee on mental deficiency, as if it had been suddenly revealed But if hon Members had ever read the reports on the health of school children by the Chief Medical Officer of the Board of Education for 1924 they would have found on page 145 a long footnote explaining the composition of that committee and a considerable passage in which its object was explained Teachers were not excluded from it, and one member of the committee was Miss Redfern, the headmistress of a residential school for mentally defective children. As regards the question of the black-listed schools the noble lord said that the bulk of the provided schools would be dealt with by the end of the programme period, and without laying down a hard-and-fast date for the termination of recognition, he thought that every local authority should proceed on the assumption that all the A schools on the list, and the bulk of the B schools, should have been dealt with by the beginning of the school year—that meant September, 1930 The position in regard to the non-provided schools was not quite so clear, but he did not think that the progress up to date had been unsatisfactory. The managers of non-provided schools had to face many difficulties

Mr Morgan Jones said that in reading the report presented by Sir George Newman recently, he noticed that he said that in 1900 there were 142,912 children under the age of 11 who died In 1921 that number had been substantially reduced, but it was still colossal, it was reduced to 112,906 In 1925 it was still 96,669 Out of that figure 81,080 were children under 5 That was a staggering and alarming figure, and it entitled them to urge that some additional provision should be made to bring these younger children, at any rate at the age of 4 or 5, into some form of nursery school where their physique as well as their moral training might be more amply looked after According to the report of the medical officer of the London County Council, Dr Menzies, there were 10,000 children who had suffered, or were suffering from rheumatic symptoms Very substantial work had been done in this department, but, having regard to the effects in later life of this disease, there was a strong case for the intensification of the medical service attached to the educational service throughout the country

The Duchess of Atholl (Parliamentary Secretary to the Board of Education) said that everyone who had read the report of the medical officer on the health of young children must feel grave concern at the figures given with regard to children under 5 years of age The nursery schools were doing splendid work in improving the health and general training of young children But they *did not* look for health in this matter from nursery schools alone They also recognised the valuable work done by day nurseries and the extent to which voluntary effort had contributed to this task With the present financial difficulties with which the country was faced anyone responsible for educational administration would welcome every help that voluntary effort could give Rheumatism was another disquieting feature disclosed in the principal medical officer's report She could assure the House that children suffering from heart trouble caused by rheumatic affection were to an increasing extent being admitted to the physically defective schools and a very welcome feature of the problem of the physically defective child was that in some areas—thanks to the provision of orthopædic treatment for the crippled child, which if given at a sufficiently early age, offered hope of a real cure—they were finding that increasing space was being found for the rheumatic children, or children with affected hearts, in schools originally intended for the crippled child She thought they were doing something in an ever-increasing degree to meet the unhappy case of these children

The Bill was read a second time

HOUSE OF LORDS

Wednesday, March 23rd

Air Force Accidents

Lord Gorell called attention to the frequency of accidents in the Royal Air Force He said that the Secretary of State for Air had said that there were 58 fatal accidents in the Force last year That was an average of more than one a week, and only in the previous week there were some more. The recent statement by the Prime Minister had not entirely removed all the sense of uneasiness on this question Most of these accidents occurred, as far as could be known, from certain definite causes He thought that it was admitted that the "stalling" of a machine, especially when it was near the ground, was at any rate a very frequent cause of these accidents He found among the technical experts criticism of the Air Ministry for having been rather dilatory in testing and possibly applying safety devices He did not associate himself with those criticisms, but he would like further information on the matter

The Duke of Sutherland (Paymaster-General), replying for the Air Ministry, said that from some criticism which had recently appeared in the Press, and had even been heard in the House of Commons, it might almost be supposed that the Air Ministry kept no proper record or statistics, but simply accepted the accidents as necessary concomitants of aviation It might even be supposed that the Air Ministry made no real endeavour to reduce the number of these accidents Nothing was further from the truth The Prime Minister had satisfied himself that the fullest statistics had been kept since the war, and that the whole problem was under constant review from every angle The Secretary of State and the Air Council had the very strongest motives for reducing the number of these accidents, if for no other reason than that such accidents were bound to act as a deterrent to recruiting The Prime Minister in his recent statement had shown conclusively that those accidents which were due to what he called remediable causes were a very small proportion of the whole, and that no particular type of machine, and no particular station or unit, was more prone to accidents than others It was a sad fact that aviation must for many years to come entail accidents The real question was whether the number could be successfully reduced—in other words, whether unnecessary and possibly avoidable accidents took place There was a constant improvement from 1921 to 1925 in the ratio of accidents to hours flown, whether fatal accidents, accidents involving injury to personnel, or accidents only causing material damage to machines The actual number of accidents irrespective of the amount of flying was not a fair basis of comparison, nor was the actual number of lives lost A comparison with other countries did not suggest that our accident rate was excessive In some respects—for instance, in accidents due to mechanical causes and maintenance—our record was a good deal better than other countries The Air Ministry was by no means content, however, with the improvement that had taken place Continual efforts to decrease the number of accidents were being made Short of crossing the psychological border-line, which as the Prime Minister had said would inevitably undermine the pilot's morale and destroy the fine spirit existing to-day, every precaution was taken Unnecessarily dangerous flying was forbidden and the prohibition was enforced Pilots were constantly under supervision both by senior officers and by the Royal Air Force Medical Service The Medical Service was fully alive to the necessity of detecting any incipient physical unfitness, strain, or staleness before harm could be done Abstemious habits, as far as possible, were enforced by regulation and inculcated by example In not one single case had indulgence in alcohol been proved to have caused or contributed to an accident in all the years covered by these statistics In the matter of design and research also efforts were being made towards greater safety

Lord THOMSON said, like everyone else who had been associated with the Air Ministry, he had lived rather under the shadow of this toll of human lives due to accidents He had had a certain experience of the psychology of our airmen when he was Secretary of State for Air One could not live with these lads for any length of time without noticing that some of them were very highly strung They were extraordinarily intelligent They had courage of the most remarkable kind, and in a way the more highly strung they were the better pilots they were in war and the better they were for this particularly dangerous sort of work A great many of them were reckless, and were rather like young thoroughbred horses, most difficult to handle They were a constant source of anxiety to those in charge of them, but no one denied that they were one of the glories of the race The men who trained our pilots had not only to have high professional qualities, but they also must have some of the qualities of a physician They were dealing with these highly strung young fellows, and they had to watch their health and their state of mind, for if either was at all defective at any given moment, that might make all the difference between a successful air evolution and a fatal crash It was in the interests of these men that they should be very chary about giving publicity to reports

TUESDAY, MARCH 29TH

Indian Medical Service

Lord LAMINGTON asked the Secretary of State for India what steps were being taken to reconstruct the Indian Medical Service and to provide adequately for the medical needs of the people of India?

The Earl of BIRKENHEAD said since this question was last raised in their lordships' House he had been in constant correspondence with the Government of India They in their turn had consulted the provincial governments in India with a view to constructing the future organisation of the medical service in India He had recently received from the Government of India their final proposals, and his comments on these were forwarded to them on Feb 17th Pending receipt of their reply he was not in a position to give to the House full details of the scheme which it was proposed to adopt The cardinal features of it were (1) the retention of the Indian Medical Service, and the necessary war reserve of trained medical men; (2) the provision of European medical attendance for European officers of the superior Civil Service and their families; (3) the creation of provincial medical services, recruitments for which would be carried out by the local governments themselves He anticipated that it would be possible to bring the new scheme into operation at no distant date

Sale of Food and Drugs Bill

On the motion of Lord LAMINGTON the Sale of Food and Drugs Bill was read a second time

HOUSE OF COMMONS

WEDNESDAY, MARCH 23RD

Vivisection

Lieut.-Commander KENWORTHY presented a petition signed by 15 286 inhabitants of London and other places praying that the practice of vivisection be prohibited by law

Cost of Beds in Military Hospitals

Sir FREDRIC WISE asked the Secretary of State for War the cost of a hospital bed per day and how it was approximately made up —Sir L WORTHINGTON-EVANS replied The estimated daily cost of each occupied bed is 13s 7d, of which 2s 9d is for the patient's maintenance, 7s 1d for staff, and 3s 9d for standing charges

THURSDAY, MARCH 24TH

Secretaries for School Medical Officers

Dr VERNON DAVIES asked the President of the Board of Education if he had received any reply from the Lancashire Education Authority with respect to his inquiry as to their provision of secretaries for school medical officers and, if so, had he come to any decision as to the necessity or otherwise for such appointments —Lord E PERCY replied I have received a report on this subject I understand that the 15 clerks employed as secretaries discharge a number of duties which, in other areas, fall upon the headquarters clerical staff and they are, therefore not to be regarded as a net addition to the staff required for the purposes of the School Medical Service I hardly think the Board are called upon to pronounce an opinion on the merits of minor administrative arrangements of this kind which must necessarily be left to the discretion of the authority

Feeding of Necessitous Children

Mr WESTWOOD asked the President of the Board of Education what was the State grant for feeding of necessitous children in England, and total expenditure for same, for the years 1922, 1923, 1924, 1925, and 1926 respectively, and what was the estimate for 1927 —Lord E PERCY replied The following is the information asked for The expenditure of local education authorities on the provision of meals in the financial years in question was as follows 1921–22, £951,000, 1922–23, £256 000, 1923–24, £152,000, 1924–25 £138,000, and 1925–26, £160,000 (pre-audit) The expenditure for 1926–27 cannot be ascertained until after the conclusion of the year As regards the coming financial year, the estimates of local authorities have not yet been received but, as at present advised, I anticipate that the expenditure will approximate to the normal Grant is not paid upon the separate items, but upon the whole, of an authority's expenditure on elementary education, of which expenditure on the provision of meals forms a small part

The Registration of Opticians

Mr ROBERT WILSON asked the Minister of Health whether he had decided to set up a committee to inquire into the question of registering opticians, and, if so would he state the terms of reference and the personnel of the committee —Mr CHAMBERLAIN replied The answer to the first part of the question is in the affirmative The terms of reference to the Committee will be to consider the Optical Practitioners (Registration) Bill and to make recommendations The personnel of the Committee is not yet quite complete, but I hope to be in a position to announce its composition at an early date

Mr R MORRISON May I take it that the Committee's terms of reference and their deliberations will be entirely confined to the question of opticians only?

Mr CHAMBERLAIN The Optical Practitioners (Registration) Bill is the one which they will consider

Mr H WILLIAMS Can the Minister of Health say whether the Committee is likely to report before May 13th, the date on which the Bill is set down for second reading?

Mr CHAMBERLAIN I do not think I am in a position to answer that question The Committee is only just being set up

Housing Conditions and Public Health

Mr DAY asked the Minister of Health whether, in view of the cost to the country caused by sickness owing to bad housing conditions, he will consider the introduction of legislation having as its object the licensing of all property owners who owned and let houses with a rateable value under £80 a year, so as to enforce an approved standard of sanitation and repair in these houses —Mr CHAMBERLAIN replied Local authorities already have wide powers under the Housing Act and Public Health Acts to secure

in Scotland; and, if so, when such legislation would be introduced —Sir John Gilmour replied I propose to await the Report of the Scottish Committee on Young Offenders which is now sitting, and to consider the two reports together I have already taken action on recommendations of the Committee which did not require legislation

Research Work and Tuberculous Milk

Mr Everard asked the Minister of Agriculture whether any research work was being carried out at present to endeavour to discover a quick and effective method of determining whether milk was tuberculous —Sir G Hennessy (Comptroller of the Household) replied I have been asked to reply on behalf of the Lord President of the Council as the subject falls within the scope of the Medical Research Council Various investigations have been promoted during the past few years in the attempt to devise better methods for the purpose One of these, undertaken jointly by workers at the National Institute for Medical Research and at the National Institute for Research in Dairying, made possible a considerable improvement of pre-existing methods An account of this was published in 1925 and I can give my hon friend the reference The subject is being kept in view, and further investigations will be made if new means of attacking this difficult problem can be found The reference to which I have referred is as follows S R Douglas and L J. Meanwell A New Method for the Concentration of Bacilli in Tuberculous Milk (*British Journal of Experimental Pathology*, 1925, vi, 203)

Roadside First-aid

Mr. Day asked the Minister of Transport if his attention had been drawn to the scheme of roadside first-aid that was being introduced by the British Red Cross Society and the Order of St John on the important arterial roads, and whether he would consider erecting special kiosks on the roadside to give the Society facilities for storing their equipment —Colonel W Ashley replied While welcoming any effort that may be made to render assistance to wayfarers, I am not in a position to incur expenditure on the erection of kiosks

Eyesight Tests for Motorists

Mr Day asked the Minister of Transport if he was aware that there were approximately 15,000,000 people in Great Britain who suffered with imperfect vision; and would he consider the introduction ,of legislation making it compulsory that all applicants for a motor-driving licence should pass a special eyesight examination, either by their own medical practitioner or competent optician, which should include tests for distance and colour vision, and produce a satisfactory certificate to the licensing authority before a driving licence was issued —Colonel W Ashley replied The draft Road Traffic Bill which has recently been published contains provisions for the withholding of a driver's licence from a person suffering from any physical disability (including defective vision) which is likely to cause the driving of a motor vehicle by him to be dangerous to the public The draft Bill also provides that in certain circumstances such a person may claim to be subjected to a test as to his fitness or ability to drive a motor vehicle

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Messrs Baillière Tindall and Cox will publish on April 5th a book entitled "Lister as I Knew Him," by Dr J R Leeson, who is one of the few survivors who worked under Lord Lister in Edinburgh in the early days of antiseptic surgery The book will consist of 250 pages, with numerous illustrations and a portrait of Lord Lister

New Lodging-house for Women —The first Cecil House, to which reference was made in a leading article last week (The Lancet, March 26th, p 659) was opened by the Lord Mayor of London at 35, Devonshire-street, Theobald's-road, Bloomsbury, on March 28th The house has been acquired, adapted, and equipped at a cost of £3800, and contains 15 beds for which a charge of 1s a night will be made These are in nine rooms on three floors, the two smallest have each only one bed, and will be kept for women with babies The house has a comfortable sitting-room, a bath, and two foot-baths with a constant supply of water, and arrangements are made which allow lodgers to wash their clothes Besides these facilities, the fee of 1s includes tea and biscuits in the morning The house will be open every evening at 8, and though women may apply on consecutive nights they cannot secure accommodation in advance It is hoped that six lodgings of this kind will be opened in London, and since the campaign was started last October the sum of £8614 has been raised towards their establishment

Medical News.

University of Oxford —A Radcliffe Travelling Fellowship has been awarded to Mr Thomas Cecil Hunt B M Dr Hunt was an open scholar at Magdalen College he obtained the Theodore Williams Scholarship in Human Anatomy in 1922, the Theodore Williams Scholarship in Pathology in 1924, and the Radcliffe Scholarship in Pharmacology in 1924 —Mr Bernard Warren Williams, B M, F R C S Eng, has been elected to the Radcliffe Prize for a thesis on the Importance of Toxæmia due to Anaerobic Organisms in Intestinal Obstruction and Peritonitis Both Fellowship and Prize are in the gift of the Master and Fellows of University College

University of London —At a meeting of the Senate held on March 23rd the Vice-Chancellor, Sir William Beveridge, being in the chair, Mr W E Le Gros Clark, F R C S Eng, was appointed to the University Chair of Anatomy, and Dr Hamilton Hartridge, F R S, to the University Chair of Physiology, tenable at St Bartholomew's Hospital Medical School Both appointments will date from Sept 1st, 1927

Mr Le Gros Clark was appointed in 1924 to the University Readership in Anatomy, tenable at St Bartholomew's Hospital, and in the same year was awarded the Hunterian Medal for Anatomical Research and was elected a member of the Board of Examiners for the Fellowship of the Royal College of Surgeons of England In 1925 he was elected a member of the Prosectorial Committee of the Zoological Society and of the Council of the Anatomical Society

Dr Hartridge has been a Fellow of King's College, Cambridge, since 1912, and was awarded the Horton Smith Prize in 1918 Since 1919 he has been lecturer on Organs of Special Sense and Senior Demonstrator in Physiology at the Physiology Laboratories, Cambridge He has examined for the Universities of Cambridge and Sheffield

Society of Apothecaries of London.—At recent examinations the following candidates were successful in the undermentioned subjects —

Surgery —J De Rosa, London Hosp, J A Fernandez, St Bart 's Hosp, R Kahn and A M A. Moore, London Hosp R C Pratt, Birmingham, S Slotar, Guy's Hosp, and W G H. Warner, St Mary's Hosp

Medicine —G W Ayres, St Mary's Hosp

Forensic Medicine —G W Ayres, St Mary's Hosp, A C F Barrow, Edinburgh, L J Lawrie, London Hosp G C Rhys Jones Charing Cross Hosp, and H N Walker, St Bart 's Hosp

Midwifery —A C F Barrow, Edinburgh, W H Collins, London Hosp L J Corbett, St Mary's Hosp, S Goldman London Hosp, H H Lakin, Birmingham and London Hosp and W D Neill and S le R Switzer, London Hosp

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery G W Ayres, A C F Barrow, J De Rosa, R Kahn, and H N Walker

University of Liverpool —At recent examinations the following candidates were approved —

FINAL EXAMINATION FOR M B AND CH B DEGREES

Part I —R K Bowes (with distinction), Gladys A Coventr J H St B Crosby A Dala, H R Dugdale, R A Furnis K Jilani, E W Jones, Mary G Jones, T Lotter Hild M C MacMahon Garry, J S Mather, G W Molyneux Elizabeth B Robson, J L A Webster, and F J Welto

Part II —I Lipschitz

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY

G Friedland R W Gemmell, T Harrison, Agnes B MacGrego and A M Robertson

University of Aberdeen —At a graduatio ceremony on March 23rd the honorary degree of LL D was conferred on Prof Matthew Hay, Sir Frederick Gowland Hopkins, F R S, and Sir William Milligan The following degrees were also conferred —

M D —Philip Bayer (awarded commendation for thesis)

D Sc —Lieut -Colonel A G McKendrick, M B

M B, Ch B —*Wilfrid Marshall and *A S Paterson (with second class honours), G J Allan, A W Badenoch, John Barclay Catherine I A Craig J G H Davidson, R G Dingwall P T J Doss A D Duff G A P Fraser, J M C Gill John Leiper J W Lobban *N J R Logie *H G McPherson C P Mann, N G Marr J R. Moir J H Otty, Mary Riddoch, C C Ross, C G Walker, L G Walters

D P H —Jessie R G Dingwall John Innes

* Completed Final Medical Professional Examination with distinction

University of Glasgow —Among the recipients of the honorary degree of LL.D, to be conferred at the June Graduation will be Sir Charles Ballance, consulting surgeon to St Thomas s Hospital

Committee for Scientific and Industrial Research —The King in Council has appointed Mr Henry Thomas Tizard to be Secretary to the Committee of the Privy Council for Scientific and Industrial Research on the retirement of Sir H Frank Heath from that office on June 1st next

Society for the Study of Inebriety —The annual meeting of this Society will be held in the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, London, W, on Tuesday, April 12th, at 4 P M (tea and coffee at 3 45) Dr R W Branthwaite will open a discussion on the Inebriates Act of 1898

West Kent Medico-Chirurgical Society —A meeting of this society will be held at the Miller General Hospital, Greenwich, on Friday, April 8th, at 8 45 P M, when Dr H C Cameron will give an address on Common Neuroses of Childhood.

West End Hospital for Nervous Diseases The Savill (Memorial) Oration will be delivered by Dr Gordon M Holmes on Thursday, April 21st, at 5 P M., at the House of the Royal Society of Medicine, 1, Wimpole-street, London, W 1 Dr R Percy Smith will preside and the subject of the Oration will be Local Epilepsy The attendance of members of the profession and medical students is invited The hospital also announces that the Savill Prize (value £15) for a post-graduate thesis on a neurological subject will be awarded this year Particulars may be had from the Secretary

Royal Sanitary Institute —A sessional meeting will be held on Friday, April 8th, at 5 P M, in the Arts Theatre of the University, Liverpool, when a discussion on Rheumatic Affections in Children will be opened by Dr Dingwall Fordyce There will also be a discussion on the Liverpool Main Drainage System Dr G F Buchan will take the chair Those proposing to attend the session should notify Dr A A Mussen, Public Health Department, Municipal Buildings, Dale-street, Liverpool, not later than April 3rd

Lectures on Infant Care —Under the auspices of the National Association for the Prevention of Infant Mortality a course of lectures for health visitors, nurses, midwives, and superintendents of infant welfare centres will be given at the Infants Hospital, Vincent-square, Westminster, from 6 30 to 7 30 P M, on Mondays from April 11th to June 27th The lecturers include Dr C K Hamilton, Dr Eric Pritchard, Dr Henry MacCormac, Mr A H Todd, Dr A F Tredgold, Mr Philip Franklin, Dr C W Hutt, Dr Muriel Radford, and Dr Donald Paterson Tickets are obtainable from the Secretary of the Association at 117, Piccadilly, London, W

The Royal Association in aid of the Deaf and Dumb are shortly opening a small maternity home for the unmarried deaf and dumb mother and her child, the Home will be in London but deaf and dumb girls in need of such a home will be admitted from any part of England Mrs Campbell Dodgson held a meeting at 22, Montagu-square on March 24th in aid of this Home The Chairman, the Dean of St Paul's, and the two speakers, Miss Higson and Miss Spooner, emphasised the special need of these deaf and dumb girls and the impossibility of their receiving adequate help in the homes for the hearing They need the care of workers trained to understand them and whom they can understand, and this the Home will provide Contributions towards the Home will be gratefully received by the Treasurer, Royal Association in Aid of the Deaf and Dumb, 413, Oxford-street, W 1, and should be marked "Maternity Home"

Fellowship of Medicine and Post-Graduate Medical Association —The Fellowship is affiliated with some 50 hospitals in London which provide a general course of instruction Detailed information about their daily practice is supplied in diary form by the Fellowship and a comprehensive ticket for this general course is issued for any period from one week to one year, at a scale of fees ranging from 2 to 20 guineas, according to the period required. As the Easter vacation falls in the middle of April the special courses arranged for this month will not begin until the last week The Royal Waterloo Hospital will provide a comprehensive course in medicine, surgery, and gynæcology Lecture-demonstrations will be given by the staff in the wards and out-patient departments (fee £3 3s) A series of eight lecture demonstrations on tropical medicine will be given on Tuesdays and Thursdays at 2 P M. at the London School of Tropical Medicine beginning April 27th (fee £2 2s) Dr Heald will give a series of four lecture-demonstrations on successive Wednesdays at the Royal Free Hospital at 5 15 P M beginning on April 27th (fee £1 1s) Copies of all syllabuses and of the *Post Graduate Medical Journal* are obtainable from the Secretary of the Fellowship at 1, Wimpole-street, London, W 1

University of Adelaide —Dr H H Woollard Teacher of Anatomy at University College, London, has been appointed to be Professor of Anatomy at Adelaide University, in succession to Dr F Wood Jones

Royal Northern Hospital —A relatively small growth in the number of in-patients last year was accompanied by a large increase in the number of out-patients The X ray department is being rebuilt at a cost of £3000 The coal strike cost the hospital at least £1500

Cost of Hospital Treatment —According to the annual report of the Coventry and Warwickshire Hospital, the average cost of an in-patient last year was £6 16*s* 3*d*, an increase of 5*s* 3*d* on the preceding year Ten per cent of the deaths were in accident cases, and of the income of £40,000, £998 came from Approved Societies

Royal Victoria Hospital, Belfast —Last year, the first since the recent enlargement, the total number of patients increased by more than 4000, and on a recent day 1230 patients were treated The cost per bed has fallen by £14 Prof J A Lindsay has retired from the chairmanship of the board of management, and is being succeeded by the Marquis of Dufferin and Ava

New Zealand Mental Hospitals —The New Zealand Government has appointed to its mental hospitals department Dr H D Hayes, of Hanwell Mental Hospital, Dr J P Waters, neurological specialist to the Central Boards of the Ministry of Pensions in London, and Dr T W J Childs, Ministry of Pensions Mental Hospital, Kirkburton, Huddersfield

Royal Hospital for Sick Children, Glasgow —It is proposed to extend the country branch of this hospital at an estimated cost of £32,500 At the annual meeting it was intimated that only £10,000 more now remained to be raised in order to secure the gift of £17,500 from the trustees of the late Mr Peter Coats This is only one of many large hospital extensions now proceeding in Scotland, the demand everywhere is for increased hospital accommodation

An Overcrowded Portsmouth Hospital —The pressure, always serious, upon the accommodation of the Royal Portsmouth Hospital has lately been increased by the longer period during which patients are retained Thus on a recent day 26 of the 175 patients had been in the hospital for two months or more, and the average stay is half a day longer than in 1925 Had the average stay not been increased it would have been possible to receive 75 more patients, which practically represents the waiting-list

Birmingham and Midland Ear and Throat Hospital.—This institution is in urgent need of enlargement, but the present site will not permit of extensions, and proposals have been placed before the Hospital Council for its inclusion in the proposed Hospital Centre at Bournbrook Meanwhile the Ludgate Hill ward for children has been set aside for private paying cases The hospital has no X ray installation, and is spending £250 a year on sending out cases to have X ray photographs taken

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Complimentary Dinner to Dr Russell Andrews On March 22nd, at the invitation of Mr Comyns Berkeley, twenty eight personal friends met Dr Russell Andrews at the Garrick Club to bid him God speed on his retirement from practice The company included Dr J B Banister, Dr J D Barris, Dr E Bellingham Smith, Sir George Blacker, Mr Victor Bonney, Mr A W Bourne, Dr G Darwall Smith, Mr S Dodd Dr M Donaldson, Dr T W Eden, Dr J S Fairbairn, Dr J P Hedley, Mr. Eardley Holland, Dr Victor Lack, Dr S Gordon Luker, Sir Ewen Maclean, Dr A. C Palmer, Dr F L Provis, Mr L. C Rivett, Sir Henry Simson, Dr T G Stevens, Mr Clifford White, Dr J A Willett, Dr J M Wyatt, and Sir Hugh Rigby and Dr Lewis Smith, who joined the London Hospital in the same year as Dr Russell Andrews Dr Eden proposed in fitting terms the health, long life, and happiness of Dr Russell Andrews which was drunk with the greatest enthusiasm, after which Dr Russell Andrews replied in Scotland; and, if so, when such legislation would be introduced —Sir JOHN GILMOUR replied I propose to await the Report of the Scottish Committee on Young Offenders which is now sitting, and to consider the two reports together I have already taken action on recommendations of the Committee which did not require legislation

Research Work and Tuberculous Milk

Mr EVERARD asked the Minister of Agriculture whether any research work was being carried out at present to endeavour to discover a quick and effective method of determining whether milk was tuberculous —Sir G HENNESSY (Comptroller of the Household) replied I have been asked to reply on behalf of the Lord President of the Council as the subject falls within the scope of the Medical Research Council Various investigations have been promoted during the past few years in the attempt to devise better methods for the purpose One of these, undertaken jointly by workers at the National Institute for Medical Research and at the National Institute for Research in Dairying, made possible a considerable improvement of pre-existing methods An account of this was published in 1925 and I can give my hon friend the reference The subject is being kept in view, and further investigations will be made if new means of attacking this difficult problem can be found The reference to which I have referred is as follows S R Douglas and L J. Meanwell A New Method for the Concentration of Bacilli in Tuberculous Milk (*British Journal of Experimental Pathology*, 1925, vi , 203)

Roadside First-aid

Mr. DAY asked the Minister of Transport if his attention had been drawn to the scheme of roadside first-aid that was being introduced by the British Red Cross Society and the Order of St John on the important arterial roads, and whether he would consider erecting special kiosks on the roadside to give the Society facilities for storing their equipment —Colonel W ASHLEY replied While welcoming any effort that may be made to render assistance to wayfarers, I am not in a position to incur expenditure on the erection of kiosks

Eyesight Tests for Motorists

Mr DAY asked the Minister of Transport if he was aware that there were approximately 15,000,000 people in Great Britain who suffered with imperfect vision ; and would he consider the introduction ,of legislation making it compulsory that all applicants for a motor-driving licence should pass a special eyesight examination, either by their own medical practitioner or competent optician, which should include tests for distance and colour vision, and produce a satisfactory certificate to the licensing authority before a driving licence was issued —Colonel W ASHLEY replied The draft Road Traffic Bill which has recently been published contains provisions for the withholding of a driver's licence from a person suffering from any physical disability (including defective vision) which is likely to cause the driving of a motor vehicle by him to be dangerous to the public The draft Bill also provides that in certain circumstances such a person may claim to be subjected to a test as to his fitness or ability to drive a motor vehicle

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Messrs Baillière Tindall and Cox will publish on April 5th a book entitled "Lister as I Knew Him," by Dr J R Leeson, who is one of the few survivors who worked under Lord Lister in Edinburgh in the early days of antiseptic surgery The book will consist of 250 pages, with numerous illustrations and a portrait of Lord Lister

NEW LODGING-HOUSE FOR WOMEN —The first Cecil House, to which reference was made in a leading article last week (THE LANCET, March 26th, p 659) was opened by the Lord Mayor of London at 35, Devonshire-street, Theobald's-road, Bloomsbury, on March 28th The house has been acquired, adapted, and equipped at a cost of £3800, and contains 45 beds for which a charge of 1s a night will be made These are in nine rooms on three floors , the two smallest have each only one bed, and will be kept for women with babies The house has a comfortable sitting-room, a bath, and two foot-baths with a constant supply of water, and arrangements are made which allow lodgers to wash their clothes Besides these facilities, the fee of 1s includes tea and biscuits in the morning The house will be open every evening at 8, and though women may apply on consecutive nights they cannot secure accommodation in advance It is hoped that six lodgings of this kind will be opened in London, and since the campaign was started last October the sum of £8614 has been raised towards their establishment

Medical News.

UNIVERSITY OF OXFORD —A Radcliffe Travelling Fellowship has been awarded to Mr Thomas Cecil Hunt B M Dr Hunt was an open scholar at Magdalen College he obtained the Theodore Williams Scholarship in Human Anatomy in 1922, the Theodore Williams Scholarship in Pathology in 1924, and the Radcliffe Scholarship in Pharmacology in 1924 —Mr Bernard Warren Williams, B M , F R C S Eng , has been elected to the Radcliffe Prize for a thesis on the Importance of Toxæmia due to Anaerobic Organisms in Intestinal Obstruction and Peritonitis Both Fellowship and Prize are in the gift of the Master and Fellows of University College

UNIVERSITY OF LONDON —At a meeting of the Senate held on March 23rd the Vice-Chancellor, Sir William Beveridge, being in the chair, Mr W E Le Gros Clark, F R C S Eng , was appointed to the University Chair of Anatomy, and Dr Hamilton Hartridge, F R S , to the University Chair of Physiology, tenable at St Bartholomew's Hospital Medical School Both appointments will date from Sept 1st, 1927

Mr Le Gros Clark was appointed in 1924 to the University Readership in Anatomy, tenable at St Bartholomew's Hospital and in the same year was awarded the Hunterian Medal for Anatomical Research and was elected a member of the Board of Examiners for the Fellowship of the Royal College of Surgeons of England In 1925 he was elected a member of the Prosectorial Committee of the Zoological Society and of the Council of the Anatomical Society

Dr Hartridge has been a Fellow of King's College, Cambridge, since 1912, and was awarded the Horton Smith Prize in 1918 Since 1919 he has been lecturer on Organs of Special Sense and Senior Demonstrator in Physiology at the Physiology Laboratories, Cambridge He has examined for the Universities of Cambridge and Sheffield

SOCIETY OF APOTHECARIES OF LONDON —At recent examinations the following candidates were successful in the undermentioned subjects —

Surgery —J De Rosa, London Hosp , J A Fernandez, St Bart 's Hosp , R Kahn and A M A. Moore, London Hosp R C Pritt, Birmingham , S Slotar, Guy's Hosp , and W G H. Warner, St Mary 's Hosp

Medicine —G W Ayres, St Mary's Hosp

Forensic Medicine —G W Ayres, St Mary 's Hosp , A C F Barrow, Edinburgh L J Lawrie, London Hosp G C Rhys Jones Charing Cross Hosp , and H N Walker, St Bart 's Hosp

Midwifery —A C F Barrow, Edinburgh , W H Collins, London Hosp L J Corbett, St Mary's Hosp , S Goldman, London Hosp , H H Lakin, Birmingham and London Hosp , and W D Neill and S le R Switzer, London Hosp

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery G W Ayres, A C F Barrow, J De Rosa, R Kahn, and H N Walker

UNIVERSITY OF LIVERPOOL —At recent examinations the following candidates were approved —

FINAL EXAMINATION FOR M B AND CH B DEGREES

Part I —R K Bowes (with distinction), Gladys A Coventry, J H St B Crosby A Dala H R. Dugdale, R A Furniss, K Jilani, E W Jones, Mary G Jones, T Lotter Hilda M C MacMahon Garry, J S Mather, G W Molyneux, Elizabeth B Robson, J L A Webster, and F J Welton

Part II —I Lipschitz

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY

G Friedland, R W Gemmell T Harrison Agnes B MacGregor and A M Robertson

UNIVERSITY OF ABERDEEN —At a graduation ceremony on March 23rd the honorary degree of LL D was conferred on Prof Matthew Hay, Sir Frederick Gowland Hopkins, F R S , and Sir William Milligan The following degrees were also conferred —

M D —Philip Bayer (awarded commendation for thesis)

D Sc —Lieut Colonel A G McKendrick, M B

M B , Ch B —*Wilfrid Marshall and *A S Paterson (with second-class honours), G J Allan, A W Badenoch, John Barclay Catherine I A Craig J G H Davidson, R G Dingwall, P T J Doss, A D Duff, G A P Fraser, J M C Gill John Leiper, J W Lobban *N J R Logie, *H G McPherson C P Mann, N G Marr J R Moir, J H Otty, Mary Riddoch, C C Ross, C G Walker, L G Walters

D P H —Jessie R G Dingwall John Innes

* Completed Final Medical Professional Examination with distinction

UNIVERSITY OF GLASGOW —Among the recipients of the honorary degree of LL D , to be conferred at the June Graduation will be Sir Charles Ballance, consulting surgeon to St Thomas's Hospital

COMMITTEE FOR SCIENTIFIC AND INDUSTRIAL RESEARCH.—The King in Council has appointed Mr Henry Thomas Tizard to be Secretary to the Committee of the Privy Council for Scientific and Industrial Research on the retirement of Sir H. Frank Heath from that office on June 1st next.

SOCIETY FOR THE STUDY OF INEBRIETY.—The annual meeting of this Society will be held in the rooms of the Medical Society of London 11, Chandos-street, Cavendish-square London W. on Tuesday, April 12th, at 4 P.M. (tea and coffee at 3 45) Dr R W. Branthwaite will open a discussion on the Inebriates Act of 1898

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society will be held at the Miller General Hospital, Greenwich, on Friday. April 8th at 8 45 P.M., when Dr H. C Cameron will give an address on Common Neuroses of Childhood

WEST END HOSPITAL FOR NERVOUS DISEASES The Savill (Memorial) Oration will be delivered by Dr Gordon M Holmes on Thursday. April 21st at 5 P.M., at the House of the Royal Society of Medicine, 1, Wimpole-street London. W. 1 Dr R Percy Smith will preside and the subject of the Oration will be Local Epilepsy. The attendance of members of the profession and medical students is invited The hospital also announces that the Savill Prize (value £15) for a post-graduate thesis on a neurological subject will be awarded this year Particulars may be had from the Secretary

ROYAL SANITARY INSTITUTE.—A sessional meeting will be held on Friday, April 8th at 5 P.M., in the Arts Theatre of the University, Liverpool, when a discussion on Rheumatic Affections in Children will be opened by Dr Dingwall Fordyce. There will also be a discussion on the Liverpool Main Drainage System. Dr G F Buchan will take the chair Those proposing to attend the session should notify Dr A. A Mussen, Public Health Department, Municipal Buildings, Dale-street, Liverpool, not later than April 3rd

LECTURES ON INFANT CARE.—Under the auspices of the National Association for the Prevention of Infant Mortality a course of lectures for health visitors, nurses, midwives, and superintendents of infant welfare centres will be given at the Infants Hospital, Vincent-square, Westminster, from 6 30 to 7 30 P.M., on Mondays from April 11th to June 27th The lecturers include Dr C K Hamilton Dr. Eric Pritchard Dr Henry MacCormac, Mr A. H. Todd Dr. A F Tredgold Mr Philip Franklin, Dr C.W Hutt, Dr Muriel Radford, and Dr Donald Paterson. Tickets are obtainable from the Secretary of the Association at 117, Piccadilly, London W.

THE Royal Association in aid of the Deaf and Dumb are shortly opening a small maternity home for the unmarried deaf and dumb mother and her child; the Home will be in London but deaf and dumb girls in need of such a home will be admitted from any part of England Mrs Campbell Dodgson held a meeting at 22, Montagu-square on March 24th in aid of this Home The Chairman, the Dean of St Paul's, and the two speakers, Miss Higson and Miss Spooner, emphasised the special need of these deaf and dumb girls and the impossibility of their receiving adequate help in the homes for the hearing They need the care of workers trained to understand them and whom they can understand, and this the Home will provide. Contributions towards the Home will be gratefully received by the Treasurer, Royal Association in Aid of the Deaf and Dumb, 413, Oxford-street, W 1, and should be marked "Maternity Home."

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—The Fellowship is affiliated with some 50 hospitals in London which provide a general course of instruction. Detailed information about their daily practice is supplied in diary form by the Fellowship and a comprehensive ticket for this general course is issued for any period from one week to one year, at a scale of fees ranging from 2 to 20 guineas according to the period required. As the Easter vacation falls in the middle of April the special courses arranged for this month will not begin *until* the last week. The Royal Waterloo Hospital will provide a comprehensive course in medicine, surgery and gynæcology. Lecture-demonstrations will be given by the staff in the wards and out-patient departments (fee £3 3s) *A series* of eight lecture-demonstrations on tropical medicine will be given on Tuesdays and Thursdays at 2 P.M. at the London School of Tropical Medicine beginning April 27th (fee £2 2s) Dr Heald will give a series of four lecture-demonstrations on successive Wednesdays at the Royal Free Hospital at 5 15 P.M. beginning on April 27th (fee £1 1s) Copies of all syllabuses and of the *Post-Graduate Medical Journal* are obtainable from the Secretary of the Fellowship at 1, Wimpole-street, London W 1.

UNIVERSITY OF ADELAIDE.—Dr. H. H Woollard Teacher of Anatomy at University College, London has been appointed to be Professor of Anatomy at Adelaide University, in succession to Dr. F Wood Jones.

ROYAL NORTHERN HOSPITAL.—A relatively small growth in the number of in-patients last year was accompanied by a large increase in the number of out-patients The X ray department is being rebuilt at a cost of £3600 The coal strike cost the hospital at least £1500

COST OF HOSPITAL TREATMENT.—According to the annual report of the Coventry and Warwickshire Hospital, the average cost of an in-patient last year was £6 16s 3d, an increase of 5s 3d on the preceding year Ten per cent. of the deaths were in accident cases, and of the income of £10,000, £998 came from Approved Societies

ROYAL VICTORIA HOSPITAL BELFAST.—Last year the first since the recent enlargement, the total number of patients increased by more than 4000, and on a recent day 1230 patients were treated. The cost per bed has fallen by £11. Prof J. A Lindsay has retired from the chairmanship of the board of management and is being succeeded by the Marquis of Dufferin and Ava

NEW ZEALAND MENTAL HOSPITALS.—The New Zealand Government has appointed to its mental hospitals department Dr H. D. Hayes, of Hanwell Mental Hospital; Dr J P Waters neurological specialist to the Central Boards of the Ministry of Pensions in London; and Dr. T W J Childs, Ministry of Pensions Mental Hospital, Kirkburton, Huddersfield

ROYAL HOSPITAL FOR SICK CHILDREN, GLASGOW.—It is proposed to extend the country branch of this hospital at an estimated cost of £32,500 At the annual meeting it was intimated that only £10,000 more now remained to be raised in order to secure the gift of £17 500 from the trustees of the late Mr Peter Coats This is only one of many large hospital extensions now proceeding in Scotland the demand everywhere is for increased hospital accommodation.

AN OVERCROWDED PORTSMOUTH HOSPITAL.—The pressure, always serious upon the accommodation of the Royal Portsmouth Hospital has lately been increased by the longer period during which patients are retained Thus on a recent day 26 of the 175 patients had been in the hospital for two months or more, and the average stay is half a day longer than in 1925 Had the average stay not been increased it would have been possible to receive 75 more patients, which practically represents the waiting-list.

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MEDICAL GOLFING SOCIETY —The Knock-out Tournament of this society has now reached its semi-final stage, which will be played by J Cunning, J Everidge, E Playfair, and E N Plummer

CONFERENCE ON VIVISECTION —The British Medical Association is calling a conference, to be held at its house in Tavistock-square, London, on April 4th, with the object of showing what attitude is taken up by medical and allied bodies on the subject of vivisection

TYPHOID FEVER EPIDEMIC —It is reported that an epidemic of typhoid fever has broken out in the Newmill and Holmfirth district of the Holme Valley, near Huddersfield Thirteen cases have occurred at Newmill and six at Holmfirth

LISTER CENTENARY AT PHILADELPHIA — On April 6th *a meeting of the College of Physicians of Philadelphia* will be held to celebrate the centenary of Lord Lister Addresses will be given by Sir Esme Howard, the British Ambassador to Washington, and by Mr Astley P C Ashhurst, surgeon to the Episcopal Hospital

FRESH AIR SCHOOL AT GRIMSBY —A new council school, which has cost approximately £22,000, was opened at Victoria-street, Grimsby, on March 24th It is so constructed that in fine weather practically the whole of the building can be thrown open to the fresh air It has accommodation for 300 girls and 250 infants

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole street, W

MONDAY, April 4th —8 30 P M, SOCIAL EVENING

TUESDAY —5 30 P M, ORTHOPÆDICS (Cases at 4 30 P M) Mr R C Elmslie Two cases of Spastic Paralysis Associated with Scoliosis Mr Alan Todd Case of ? Periostitis of Metatarsal Other cases will be shown

WEDNESDAY, April 6th —8 P M, ODONTOLOGY, DISEASE IN CHILDREN Special joint discussion Oral Manifestations of General Disease in Children Openers Mr A T Pitts (Odontology) Dr Robert Hutchison (Disease in Children)

WEDNESDAY —8 P M (for 8 15 P M), TROPICAL DISEASES AND PARASITOLOGY Laboratory meeting at the London School of Hygiene and Tropical Medicine, 23, Endsleigh gardens (Euston-square) W C 1 Paper Prof W Robinson Some Features of Crown Gall in Plants in Reference to Comparisons with Cancer This will be followed by a demonstration of laboratory exhibits illustrating crown gall and recent developments in tropical diseases and parasitology

THURSDAY —5 P M, GENERAL MEETING OF FELLOWS Special Discussion on Bloodletting Opening speakers Mr Walter G Spencer, Dr Herbert French, Dr *Fortescue Fox*

FRIDAY —5 P M, LARYNGOLOGY (Cases at 4 P M) Cases and Specimens will be shown by Mr J A Gibb, Mr Harold Kisch, Dr T B Jobson, Mr T B Layton, Mr A J Hutchison, Dr A L Macleod, Mr Norman Patterson 8 30 P M, ELECTRO THERAPEUTICS Papers Prof S Russ and Miss G M Scott The Growth of Tumours in Tissues exposed to X Rays and Radium The Action of Radon Seeds upon Tumours and Some Normal Tissues of the Rat Dr J C Mottram On the Co-relation Between the Experimental and Clinical Radiation of Tumours

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W C

MONDAY, April 4th —5 P M, Mr C E Shattock Large Intestine

FRIDAY, 5 P M, Prof Sir Arthur Keith The Anatomy and Physiology of the Cæcum and Appendix Vermiformis

HOSPITAL FOR SICK CHILDREN, Great Ormond street, W C

THURSDAY, April 7th —4 P M, Dr Pearson Vomiting in Pregnancy

NORTH EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N

MONDAY, April 4th —10 A M, Surgical Clinic 2 P M, Medical Cases in the Wards 2 30 P M to 5 P M, Medical, Surgical and Gynæcological Clinics Operations

TUESDAY —2 30 P M to 5 P M, Medical, Surgical, Throat, Nose, and Ear Clinics Operations

WEDNESDAY —2 30 P M to 5 P M, Medical, Skin, and Eye Clinics Operations

THURSDAY —11 30 A.M., Dental Clinic 2 30 P M to 5 P.M., Medical, Surgical, and Ear, Nose and Throat Clinics Operations

FRIDAY —10 30 A M, Throat, Nose, and Ear Clinics 2 30 P M to 5 P M, Surgical, Medical, and Children's Diseases Clinics Operations

Also on FRIDAY, April 8th, at 4 30 P M, Dr L R Yealland will demonstrate on Selected Cases of Nerve Disease

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole street, W

MONDAY, April 4th, to SATURDAY, April 10th —QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E All day course, the chief feature of which is the showing of cases ROYAL EYE HOSPITAL, Southwark, S E Afternoon demonstrations on the diagnosis and treatment of diseases of the eye Further information from the Secretary

PEOPLE'S LEAGUE OF HEALTH (Sims Woodhead Health Lectures)

MONDAY, April 4th —6 P M (at the Medical Society of London, 11, Chandos street, W), Dr H Crichton Miller Development and Function of Mind

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn road, W C

FRIDAY, April 8th —4 P M, Dr Andrew Wylie Tuberculosis of the Larynx

ST MARGARET'S HOSPITAL FOR WOMEN, Acomb street, Whitworth Park, Manchester

WEDNESDAY, April 6th —12 noon, Mr A C Magian *Ovarian Grafting* demonstration

MANCHESTER ROYAL INFIRMARY POST-GRADUATE LECTURES

TUESDAY, April 5th —4 15 P M, Dr C H Melland Epidemic Encephalitis, Acute and Chronic

FRIDAY —4 15 P M, Dr A Ramsbottom Demonstration of Medical Cases

ST MARY'S HOSPITALS, MANCHESTER POST-GRADUATE LECTURE

FRIDAY, April 8th —4 30 P M (at the Whitworth street West Branch), Dr W R. Addis Induction of Labour

ANCOATS HOSPITAL, POST GRADUATE LECTURES, Mill-street, Manchester

THURSDAY April 7th —4 15 P M, Dr W J S Reid Tabes *Dorsalis*

Appointments.

SOURASKY, M, M D Leeds, F R C S Edin, has been appointed Assistant Surgeon in the Ear, Nose, and Throat Department of the London Jewish Hospital

Certifying Surgeons under the Factory and Workshop Acts VINES, S K, L R.C P Edin, L M R C P I (Allendale), WELLS, J, M R C S, L R C P Lond (Bilston) KEITH, F L, M D Aberd Medical Officer of Health of Bethnal Green

Vacancies.

For further information refer to the advertisement columns

Beit Memorial Fellowship for Medical Research —Fellowships

Belgrave Hospital for Children, Clapham road, S W —Hon Radiologist 50 guineas

Birmingham and Midland Eye Hospital —Res Surg O £150

Cambridge, Addenbrooke's Hospital —H S At rate of £130 Also Cas O and Res Anæsthetist At rate of £130

Canterbury, Borough Mental Hospital —Asst M O £300

Charing Cross Hospital Institute of Pathology, 62–65, Chandos street Strand, W C —Asst Pathologist £500 for first six months

Chester Royal Infirmary —H S £150

Derbyshire Royal Infirmary, Derby —H P and Asst H S, and Cas O Each at rate of £150

Dover, Royal Victoria Hospital—H S £180

Exeter, Royal Devon and Exeter Hospital —Res Cas O At rate of £100

Gravesend and North Kent Hospital —Jun H S £150

Grimsby and District Hospital —Sec Supt £300

Guildford Royal Surrey County Hospital H S £150

Halifax Royal Halifax Infirmary —Third H S £100

Hampstead General and North West London Hospital, Haverstock Hill, N W —H S, H P, and Cas M O Each at rate of £100

Hospital for Consumption and Diseases of Chest, Brompton S W —H P

Hospital for Epilepsy and Paralysis, Maida Vale, W —Res M O and H P At rate of £150 and £100 respectively Also Hon. Gynæcologist
Leeds, Gateforth Sanatorium —Res M O £400
Leicester Royal Infirmary —Hon S to Ear, Nose, and Throat Dept
Manchester, Ancoats Hospital —H S for Orthopædic Dept At rate of £100
Manchester Royal Infirmary —Res Surg O £200
Manchester Victoria Memorial Jewish Hospital, Hon Surg Also Sen. H S £250
Manor House Hospital, Golders Green, N W —H S At rate of £200
Metropolitan Hospital, Kingsland road, E —H P 's , H S 's , and Two Cas O 's At rate of £100
Mount Vernon Hospital for Diseases of Chest, Northwood, Middlesex —Asst Res M.O At rate of £250
Northumberland County Council and Urban District Council of Newburn —Asst County M O H , &c £700
Norwich, Norfolk and Norwich Hospital —H S £120
Perth, James Murray s Royal Asylum —Asst P £300
Portsmouth, St Mary s Infirmary, &c —First Asst Res M O £350
Prince of Wales's General Hospital, Tottenham, N —Two Hon Anæsthetists Each £40
Princess Louise Kensington Hospital for Children, N Kensington —One P , Two Asst. P 's, Two S 's and Two Asst S 's &c
Putney Hospital , Lower Common, Putney S W —Res M O £150
Redhill, Surrey, Royal Earlswood Institution —Jun Asst M O At rate of £250
Richmond Royal Hospital —Asst H S At rate of £100
Royal Chest Hospital, *City road, E C* —H P At rate of £100 Also Res M O At rate of £150
St Albans Herts, Hill End Mental Hospital —Third Asst M O and Pathologist. £450
St John's Hospital, Lewisham, S E —Res Cas O At rate of £100
Sheffield Royal Infirmary —H S At rate of £80
Stockton on-Tees Stockton and Thornaby Hospital —Hon S to Ear Nose and Throat Dept
University of London, South Kensington, S W —Chair of Anatomy, £1000
Ventnor, Isle of Wight Royal National Hospital for Consumption —Med. Supt £1000
Walthamstow, Wanstead, and Leyton Children's and General Hospital —Sen. Res H S and Jun Res H S At rate of £150 and £100 respectively
Weir Hospital Grove road, Balham, S W —Jun Res M O £100
West End Hospital for Nervous Diseases, 73, Welbeck-street, W —Cas P £200

The Chief Inspector of Factories announces the following vacant appointments for Certifying Factory Surgeons Matlock (Derbyshire, Buckhaven (Fifeshire), and Sedbergh (Yorks, West Riding)

Births, Marriages, and Deaths.

BIRTHS

CHEYNE.—On March 22nd at Quinton Lodge Leamington Spa, the wife of Dr A. L. Cheyne of a son (stillborn)

COXON —On March 22nd, the wife of Cedric Coxon, M.B , Dersingham, of a son

DAVIES —On March 20th, at Tavistock House, Haywards Heath, the wife of Dr J H Twiston Davies, of a son

LEAK.—On March 22nd at Dingle House, Winsford Cheshire, the wife of Dr W Norman Leak of a son (John)

SCHLESINGER.—On March 26th at Hollycroft-avenue, London, the wife of Dr Bernard Schlesinger of a daughter

MARRIAGES

CRESWELL—TURTON —On Jan 15th, at Vryheid, Natal, Harry Edmund Creswell M.C , M.B , B Ch. Cantab , M.R.C S Eng , M.R.C P Lond., to Amy Joyce, youngest daughter of the late Frank Turton, Esq of Hayfields, Glencoe, Natal

PATERSON—GIBSON —On March 22nd, at Christ Church, Bournemouth Archibald Richard Paterson, M D , to Gladys Violet, youngest daughter of the late Edward Gibson, of Parkstone

DEATHS

BROWNLEE.—On March 20th at Spencer-road Twickenham, Dr John Brownlee, M.D , D P H , Statistician to the National Medical Research Committee

HASLAM.—On March 15th, at St. Winnows Bromley, Kent Arthur Charles Haslam, aged 54

POLLARD —On March 21st, at his residence, Upper Hamilton-terrace Joseph Pollard, M.A., M.R.C S

STOVIN —On March 20th, very suddenly at a nursing home, Yeovil, Somerset, Cornelius Frederick Stovin, M A. Oxf , L S A. D P H., aged 64

WHITE.—On March 21st, at Rake's Halt Cove, Bampton, Devon, Colonel William Westropp White, C B , C.M G , M.D , I.M.S (retired) aged 64

WONNACOTT —On March 22nd suddenly, at Neville-court, Grove End-road, N W , R. R. Howard Wonnacott, M.R.C S , L R.C.P , aged 60

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

Notes, Comments, and Abstracts.

THE CHRONIC RHEUMATIC DISEASES *

BY CAREY F COOMBS, M D , F R C P LOND ,
PHYSICIAN WITH CHARGE OF OUT PATIENTS, BRISTOL GENERAL HOSPITAL.

BETWEEN the various maladies which may still be included within the omnibus title of Chronic Rheumatic Diseases there is more diversity than similarity The one thing common to them all is pain limiting and interrupting the movements of the limbs and trunk. That is what the patient complains of, and as the first rule of treatment is to remove the cause, it follows that ever since patients began to complain of rheumatic pains physicians have been searching for causes In many instances these have been found, and certain categories of articular crippling have been lifted wholesale out of the general assemblage of disorders labelled rheumatic For example, there are the arthropathies that accompany organic disease of the central nervous system such as locomotor ataxia, and those other crippling changes in joints that may arise as a result of chronic infections of the lung

No well informed person would nowadays think of describing these as rheumatic Then there are other orders of articular disease which are emerging from the rheumatic pool Let us glance for a moment at two of these—chronic gout and gonococcal arthritis The first point of similarity between them is that each possesses its own peculiar symptomatology, although in each case the clinical picture may so far imitate others that what may be termed the hedging titles, "rheumatic gout" and "gonorrhœal rheumatism," are still employed, even by those who ought to know better

The second point is that in each instance the discernment of a clinical individuality, that of chronic gout on the one hand and of gonococcal arthritis on the other, has made it easier, one might almost say made it possible to discover behind the characteristic clinical picture a definite causation In the case of gout we have a disorder of the internal chemistry, with a strong hereditary factor and an even stronger connexion with certain forms of dietetic excess Gonococcal arthritis, on the other hand, is due, as its name indicates, to a generalisation throughout the body of the specific microbe of gonorrhœa

A third and highly significant point of similarity between these two diseases is the fact that both of them are decreasing in frequency This decrease has been due, not to an organised campaign against gout on the one hand or gonorrhœal arthritis on the other, but rather to a recognition, first by the medical profession and then by the public, of these ætiological facts , and also to an increasing respect for dietetic temperance in the one case, and for chastity in the other

This, then, has been the series of steps by which the incidence of certain forms of arthritis has been reduced First, the clinical type has been defined Second, the causation of the group has been sought and found Third, diffusion of the knowledge of this causation has led to its prevention Can we make use of a similar process in order to get rid of other forms of "rheumatic" disorder?

Clinical Aspects

Let us look first of all at the clinical aspects of these disorders to see whether there is any hope of grouping them, and thus of taking the first step in tracking down their causes It is here that the report of the Ministry of Health, to which I alluded last week, comes once more to our aid The Committee to whom we owe that report surveyed the various classifications of rheumatic disease and eventually adopted one which recognised three main groups With one of these, acute rheumatism, we concerned ourselves last week, and have, therefore, no need to discuss it further The other two were the non-articular forms of rheumatic disorder and the chronic joint diseases These, again, were subdivided, and under the latter heading were arrayed rheumatoid arthritis, osteo-arthritis, gout, and unclassifiable lesions of joints Of these four subdivisions we have already discussed one, that of gout Another, the group of unclassifiable lesions, need not detain us, since it is obvious that our studies of causation should end in its complete disappearance This leaves two large and well-defined groups of chronic articular disease for our consideration Of these two it will be convenient to approach the rheumatoid group first; for it is the one more nearly allied to acute rheumatism, a disease of whose causation we know a good deal, so that we may hope to be able to reason from the known to the unknown, from the causation of the acute rheumatic infection to that of rheumatoid arthritis

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* Lectures on the Causes and Prevention of Rheumatism delivered under the Chadwick Trust The first lecture appeared in two instalments in THE LANCET of March 12th and 19th The second lecture (of which this is the first half) was given on March 10th, 1927

Rheumatoid Arthritis

This malady begins to claim its victims about the age of 20 and continues to do so throughout life, as the attack-rates of the Ministry of Health's inquiry show It is, according to Strangeways, three times as common in women as it is in men *Its symmetrical distribution is characteristic* and highly suggestive of some generally diffused cause It attacks the small joints, *for* example *those of the hands,* before it does the large ones The changes which it induces are limited, at first at all events, to the synovial membranes and the soft parts surrounding the joints, the bones themselves being free from change till late in the disease Its course, though tending to be progressive, is capable of arrest, and even when it progresses does so in bouts of activity separated by long periods of quiescence In its selection of young subjects, and its preference for women, this disease is similar to the acute rheumatic infection. Many of its bouts of activity are febrile, and in this as well as in other respects the similarity to an acute or subacute outbreak of rheumatic infection may be very close Occasionally, though not so often as we might expect, perhaps, cardiac disease develops in the patient with rheumatoid arthritis Of very great significance is the fact that subcutaneous nodes occasionally develop in rheumatoid arthritis These nodes, as Vincent Coates and I have shown, are exactly similar in structure to those of the rheumatic infection of childhood, and, as we saw last week, the subcutaneous node of that infection is its most individual achievement Nothing could suggest more strongly than this does that the same kinds of organisms that are responsible for the rheumatic infection of childhood are also responsible, in some cases at any rate, for causing rheumatoid arthritis There is, therefore, a good deal of reason for expecting to find the causation of rheumatoid arthritis somewhere near that of the rheumatic infection

Now we have seen that in many instances the rheumatic infection appears to be the diffused and general expression of a tonsillar sepsis This analogy has given direction to the search for causes of rheumatoid arthritis, and has lent support to a belief in the view recently crystallised in the name "focal arthritis" which my friends Drs Thomson and Gordon of Bath propose to apply to what is generally called rheumatoid arthritis Briefly, the theory enshrined in this term is one which regards the joint changes of rheumatoid arthritis as resulting from repeated doses of micro-organisms, or their toxins, escaping *into the circulation from* some focus of infection which contains and imprisons them only imperfectly Foci of this kind are especially sought for, and in variable percentage found, in the accessible parts of the respiratory and digestive tracts, in the nasal accessory sinuses, the tonsils, and the teeth

Now, if this were all, the treatment of rheumatoid arthritis would be no great matter Get rid of oronasal sepsis and you would eradicate rheumatoid arthritis But a very brief experience *of this train of thought will display its limitations* The woman whose articular changes progress in spite of a liberal application of this policy, involving removal *of all her teeth and a good deal of* her nose, is by no means rarely encountered It is quite obvious that there are other intermediary influences which determine whether a focus *of sepsis shall or shall not be able to* inflict its products on its victim's joints, and thus provoke a rheumatoid arthritis This is proved, not only by the failure of radical treatment *of sepsis to prevent* arthritis, but also by the failure of untreated sepsis to cause it The world is full of people with streptococci imprisoned within their nasal sinuses or at the apices of their teeth, yet with no lesion of joints Moreover, how is it that in one patient the escape of streptococci from the mouth into the circulation causes rheumatoid arthritis, but in another a persistent and progressive infection of the valves of the heart? Is not the very fact that the incidence of this arthritis is so much heavier in women, a strong hint of the presence of some deep-seated biochemical influence? That other streptococcal lesion to which I have alluded—a progressive infection of the cardiac valves, or endocarditis lenta—fell, just after the war, with unusually heavy weight, on young men, and this was found to be due to a predilection for ex-soldiers *This again* appeared to be traceable to the abnormal fatigue of certain forms of military service, to something, that is *to say,* which altered the chemistry of the body Is it not probable that the peculiar affinity between rheumatoid arthritis and women in early middle life is also a chemical affinity? Dr Llewellyn thinks we shall find a relation between thyroid aberrations and the rheumatic diseases, the suggestion being that a disturbed thyroid secretion may so alter the chemistry of the body as to lay it *open to the assaults of microbes that* would otherwise fail *to* inflict damage Again, there is reason to suppose that a series of links in the chain that joins the original focus with its arthritic consequences is *to be* found in some peculiarity in the immunity reactions of the susceptible individual I hesitate even to name this possibility, so vague and impalpable is it Yet the similarity between the joint affections of serum sickness on the one hand, and those of subacute rheumatism and the acuter phases of rheumatoid arthritis on the other, and the favourable effect of introduction *of foreign* proteins into the body, in a controlled dosage, in some cases of rheumatoid arthritis, and many other such considerations, *encourage a belief that some form* of sensitiveness to unfamiliar albuminous substances is essential to the causation of rheumatoid arthritis We have to bear in mind how closely similar are the reactions of the skin and mucous membranes on the one part, and of the synovial membranes of the joints on the other, to the introduction of foreign substances of this class

In the whole group of exudative phenomena, ranging from nettle rash to hæmophilia through every shade and degree *of purpura,* that which happens in the mucous membranes and skin happens also in the joints, and many of these outbreaks we know *to be due to the escape of foreign proteins,* bacterial or otherwise, into the circulation As an example I might quote the case of a young married woman who was recently under my care in the Bristol General Hospital I first saw her in the latter part of 1925 because of recurrent attacks of swelling and stiffness in the knee-joints These attacks would begin quite suddenly and then disappear gradually in the course of *a* few days I arranged to take her into the hospital wards for investigation, but something intervened to prevent this, and I *saw no more of* her for about a year Then she was sent up again, this time on account of recurrent swelling of the face, of the kind known as giant urticaria or angioneurotic œdema On examining her throat I found both tonsils shrunken, and a long sinus in the right tonsil from which pus could be squeezed From this pus a streptococcus was grown, and an emulsion of the culture was inoculated into her scarified skin, which showed a definite sensitiveness to the test My colleague, Mr John Wright, removed both tonsils very carefully and thoroughly, and it is interesting to note that this was followed immediately by a rise of temperature and a brief bout of swelling, just in that part of the face in which the urticaria had been wont to appear, and then in the knee-joints These phenomena soon passed off, but do they not suggest that operation *did,* for the moment, release into the circulation toxins akin to those which had already provoked similar attacks?

I have allowed myself to go far afield in pursuit of these *fascinating* speculations because I want to suggest that until we have at least attempted to solve the problem of the links that join the primary focus of infection with the arthritis itself, we have no right to content ourselves with the view that there is nothing to be done save the uprooting *of those foci And, indeed, there are other reasons for* caution First it is by no means always easy to be sure where the causal focus lies *Even if the teeth sockets are* infected, is it here that the *organisms* get in? Is it not possible that they are entering through the intestinal wall also? Is not this one explanation of the frequency with which removal of infected teeth fails to arrest the progress of an arthritis? Again, most of us can recall cases in which the progress of the disease appeared to be actually hastened by extraction of teeth or operations on sinuses, because the exposure of defenceless tissues to the causal microbes *made it easier for those microbes to enter* the beleaguered body And in any case the loss of teeth or tonsils is a misfortune which can only be inflicted on a patient if we are able to promise some overtopping advantage

I wish there were opportunity to discuss the part played by faults in the less accessible regions of the alimentary and respiratory tracts, in the causation of rheumatoid arthritis It would serve to emphasise *the need* that I have tried to make plain, of more research into the nature of the idiosyncrasies which render certain persons liable to develop rheumatoid arthritis as a consequence of focal sepsis, while others equally infected *remain nevertheless* immune

Osteo-arthritis

The second subdivision of the chronic joint group of *the Ministry of Health report* is labelled osteo-arthritis The joint troubles that belong to this category are quite different from those of the rheumatoid arthritis group They are seen in old people, much more often in men than in women, they tend to localise themselves in one joint rather than in many, *and* in big joints rather than small ones, and the lesion is one of bone rather than of synovial membrane In all these points osteo-arthritis presents a complete contrast to *rheumatoid arthritis and on* the whole this contrast is a true one, save for shades of compromise between the two groups to which I *shall allude* presently It is a remarkable thing that the joints should be liable to two types of crippling disease, widely dissimilar, yet alike in so far as joints are attacked by some progressively crippling disorder in both We are constrained to ask why joints should be so much more liable to permanent disablement than muscles or bones are; for there is, apart from injury, scarcely any common form of progressive crippling that is concentrated in either of these structures

The question of vulnerability of certain tissues is one which usually provokes two sorts of answers There is the anatomical explanation which blames the exposed position of the affected part for getting it into trouble and the physiological, which ascribes the liability of a tissue to disease to some delicacy or incessancy of function by which its cells are rendered easier to injure. In the case of the joint the anatomical view would suggest that the blood-supply of the part is responsible For one thing, the joints are end-points in the circulation Around them the blood-vessels of the limb come to an end in branches which unite with each other to form anastomoses This explains the predilection of the exudative lesions of urticaria purpura, and so forth for the neighbourhood of joints and is in part responsible for the concentration of the subcutaneous node of rheumatic infection in the same region. Again, the blood passing through the synovial fringes of the joint must perforce move slowly since the capillaries are looped sharply on themselves As Dr Scott Williamson once pointed out to me, this favours the escape of bacteria and toxins from the blood as it creeps sluggishly through capillaries of the membranes lining the joints Physiologically, also the joints are vulnerable structures, for they are continually bearing the brunt of the shocks and jars to which the limbs are necessarily subjected They are the buffers which interpose between one segment of a limb and the next and it is not wonderful, therefore, that after decades of use and abuse they should often manifest evidences of wear and tear This is without doubt responsible in large part for the lesions of osteo-arthritis, just as the anatomy of the parts is largely responsible for the selection of joints rather than other tissues, by the organisms and toxins that cause rheumatoid arthritis

This is not to deny the possible existence of an infective factor in osteo-arthritis Quite apart from the gross evidences of infection which can occasionally be discerned in persons suffering from osteo-arthritis, it is probable that as we grow older we gradually lose our capacity for protecting ourselves against the bacteria that our bodies entertain You will recollect that Metchnikoff sought thus to explain the nature and distribution of the arterial changes that characterise advancing age, and if we reflect for a moment on the area exposed in the alimentary and respiratory tracts to the bacteria that infest them, we shall marvel more at the defence that the body maintains against them than at the injuries which they succeed in inflicting Probably their toxins have a share in destroying the integrity of the joint, and the fact that both osteo-arthritis and arterial degeneration are diseases of the later decades of life may be regarded as the expression of a progressive decrease in the power of the body to resist the onslaughts of the bacteria that it carries If we admit this, we recognise that the predominant partner in this plot against the bodily well-being is age. We are familiar with the fact that in general, infections claim their victims most easily from the two extremes of life; from infants and young children because they have not yet learnt the art of self-defence, from old people because they are losing that art If we are asked by what mechanism this progressive reduction in the capacity to resist infection is brought about, we can only reply in general terms that the infant develops from the germ-cells by virtue of an inherent vital energy that, after he has entered on an existence separate from that of his mother still continues for approximately one-third of his natural life to provide the impetus for growth, that this same energy appears able for the next third of his career, to make good most of his tissue losses; but that during his final third he is no longer able to do so Cells wear out and disappear, but no new ones grow up to take their place. So it is with the component parts of his joints It is the duty of these to bear the shocks and jars to which the human frame is subjected. As age advances decreasing muscular power exposes the joints more and more to those minor injuries, every one of which must involve some destruction of the articular tissues Moreover, as we have seen, the tendency of bacterial activity is to flourish more readily as advancing age furnishes a less effective opposition. On the one hand, then the joint tissues are being more readily damaged, on the other, less effectively repaired

What can preventive medicine do to oppose this combination of injuries? Very little, it must be confessed. Neither Act of Parliament nor any other human agency can postpone appreciably that failure in the vital energy that is the chief root of the trouble. It may be that some future generation will discover the elixir of life, and taste the joys of a protracted sojourn in the flesh, but we cannot as yet point to the smallest evidence of this, while all that we know of the past history of mankind discourages any expectation of a sensible increase in the average duration of a lifetime

Let us return from these airy speculations to the solid ground of everyday practice, and take stock of the man who is a likely subject for osteo-arthritis He is 60 years old, he has worked hard at some manual task, his teeth are few and evil; his bronchial tubes are permanently infected; his subcutaneous tissues are shrinking and so are his muscles Which line are we to take? Must he submit to the removal of his teeth and to incessant attempts, foredoomed to failure, to make an end of his bronchial catarrh by the use of vaccines and other bactericidal devices? Or is the stress to be laid on an adequate supply of good air and light, with a temperate balance between work and rest? For it seems to me quite certain that too little exercise is almost as provocative of osteo-arthritis as too much The man who allows his earliest experiences of pain in a shoulder to inhibit all movement of the arm is laying down permanent changes in that joint as surely as the man who is prompted by circumstances or temperament to ignore his pain entirely The fact is that in the handling of osteo-arthritis, whether from the preventive or from the remedial aspect, there is ample room for common sense, but not for much else Of all these chronic rheumatic troubles it is true, I believe, that more harm is being done by too much treatment than by too little

(To be concluded.)

THE THERAPEUTIC VALUE OF IODINE

WE have received from Dr E T Burton of Clevedon, a series of notes on the employment of iodine in various pathological conditions The message which he wishes to place on record at the end of a long professional career is that iodine as a remedy in many conditions is not sufficiently recognised After reference to the successes obtained by the external use of iodine in adenitis, a method of treatment which is now largely superseded by other measures, he writes as follows:

> "I was called about three years ago to see a boy of 8 years who had three large strumous glands protruding from the right side of his neck by the angle of the jaw His mother said she had made an arrangement to have these glands enucleated on the following morning The temptation was irresistible I told her I should do what I could for the boy I gave them some ungt iodi denigrescens, and on the following day I found the glands reduced greatly in size and on the third day they had disappeared Two days after she called again to say the glands on the left side were growing I asked if she had used the ointment. She said she had not I asked if she had got any left She replied 'Plenty' 'Well,' I said, 'go home and use it' She called on me two days after to say the glands had quite gone"

Other successes with iodine that have stayed in his memory include the use of iodine ointment in a rheumatic shoulder and in a case of "housemaid's knee" Of the 1918 epidemic of influenza he writes —

> "A terrible epidemic of which I think I had more than my share of cases In each case on the first indication of pneumonia I had the patient's chest well rubbed with ungt iodi denigrescens fitted with a Gamgee jacket and given a cough mixture which contained, in each dose of an ounce 10 grains of iodide of potassium I prescribed a diet of milk and bovril, and, when necessary small doses of pure *malt* whiskey."

A wise little note is appended with regard to the purity of the spirit

Dr Burton was for 54 years Surgeon to the Birmingham district of the Great Western Provident Society, and is critical of the National Insurance Act which brought this side of his professional work to a close. He had many opportunities during that long period of observing the beneficial effects of iodine in superficial lesions He had 600 men to deal with and all varieties of injury, especially among carmen whose ulcerations were caused by the handling of packages of all sorts, sometimes containing such dangerous material as hides Under his treatment he cannot remember that any abscess ever occurred; he ventures the question whether the external use of iodine might not be of service in the vesicular stage of small pox, being here reminiscent of the horrors of an epidemic of this disease which occurred in 1872, when he was the single-handed superintendent of an institution with 150 beds

His last note is a strictly personal one. Referring back to the substitution of iodine in cervical adenitis for surgical measures, he writes that no man has better reason than himself to award the highest praise to the skilful surgeon inasmuch as he owes his life to a successful operation performed upon him in his eighty-third year by Sir Gilbert Barling With Sir Gilbert Barling's permission he treated the superficial suppuration which attended the wound with iodine ointment, and this proved a great success

NEW PREPARATIONS

The Monsol preparations are the result of an industrial process invented by the late Dr. Ludwig Mond, and investigations have shown that while they contain the germicidal properties of phenol they are free from toxic or irritating effects The preparations are presented to the profession in four forms a liquid for external inflammatory conditions, an ointment for use in antiseptic dressings, capsules for alimentary disorders, and pastilles, designed for slow solution in the mouth, and directed to conditions in the pharynx or larynx The liquid can be diluted according to whether it is required for irrigations, sprays, dressings, packings, or tampons, while a solution of 1 in 20 Monsol can be used for cleaning instruments As a general strength 1 in 200 is suggested The ointment has been found useful in conditions where a bland protective dressing is desirable, and here the antiseptic and germicidal properties will have value to the dermatologist The capsules contain a germicidal equivalent of 120 minims of pure phenol, are tasteless, and are recommended in many toxic conditions of the bowel The Monsol preparations may be obtained from the Mond Staffordshire Refining Co, Ltd, 147, Victoria-street, London, S W 1

(1) Tricalcine, (2) Peptalmine —From the Scienta Products Laboratory in Paris we have received specimens of various cachets of Tricalcine, a drug designed for use in conditions where the mineral elements of the body are deficient The importance to the economy of salts of lime does not need insisting upon, but tricalcine can only be of service if calcium, contained in assimilable form, is administered in connexion with strict dietetic treatment—acid foods must be vetoed, the amount of fat and bread taken reduced, and there should be a strict limitation of alcohol The cachets are supplied pure or "adrenalinated" (containing 3 drops of 1 1000 adrenalin solution in each cachet) or "methylarsinated" (containing 1 centigramme of pure methylarsinate of sodium in each cachet) or "fluorated" (containing 2 centigrammes of fluoride of calcium in each cachet), and the suggested dose in each case is 1 cachet three times a day just before food It should be added that the use of tricalcine in dental practice is a feature of the manufacturers' claims

From the same laboratory we have received two specimens of a drug termed Peptalmine for which it is particularly claimed that it will be of value in the forms of migraine of anaphylactic origin which have been made the especial subject of investigation by Widal, Richet and others It is supplied in granules or sugar-coated capsules and contains the peptones of meat and fish, with extracts of eggs and milk These two preparations may be obtained from Wilcox, Jozeau, and Co, 15, Gt St Andrew-street, W C 2

MIDWIFERY IN HONG-KONG.

The clinical report of the School of Midwifery and Gynæcology of the University of Hong-Kong for the year ending April, 1926, is a record of successful pioneer work, carried out under the usual difficulties, in raising the standard of efficiency of midwives and lying-in hospitals The work of the University clinic is greatly hampered by lack of space and shortage of nurses 463 patients were delivered in the 12 months, there were 5 deaths, 5 miscarriages, and 36 "morbid" cases Unfortunately, it is very hard to persuade Chinese mothers to remain in hospital more than three or four days Induction of labour was performed twice, once on an insane woman and once in order to persuade a patient whose urine was nearly solid with albumin to remain in hospital Full statistics are given in the report which was published in the *Caduceus* for November last Discussing the difficulty of getting nursing help, Prof R E Tottenham expresses the opinion that it would be worth while sending a few Chinese girls to a big teaching hospital in Europe so that they could form the nucleus of a Chinese staff

THE AMBULANCE TRAINS OF 1914.

A pamphlet written shortly after the war by Colonel G A Moore, Deputy Chief Commissioner St John Ambulance Brigade, has been reissued [1] It deals with the early days of our ambulance trains in France, was first published by Colonel Moore under the pseudonym of "Wagonlit," and was dedicated to the whole personnel who made and manned the ambulance trains in which tens of thousands of our sick and wounded were transported to the base in such comfort as could be devised in the opening weeks of the struggle When the first six detachments of ambulance men found themselves marching over the cobbled pavements of Boulogne a little more than a week after the declaration of war, there was not a single motor ambulance fitted railway coach available in the whole of France This contingency fortunately, the British War Office had foreseen and to some extent provided against by ingenious apparatus and make shifts Colonel Moore describes how the pioneers of t British Ambulance Train Service, 300 in number, began the work which was to have such splendid results, and so lustily did they struggle that in three weeks from arrival in France three ambulance trains had steamed to the front while a fourth was in hand From that point the experiences of the Ambulance Service, under the fluctuating and mostly ill-fortunes of the early days of the war, are clearly set down, among these being the dramatic occasion when, in the third week of September, the strain on all services was overpowering, and the personnel of the Service was hopelessly short, four sergeants and four privates, all qualified doctors, as well as certain medical students, with the regimental surgeon stepped out of the ranks of the London Scottish where they had enlisted This is a stirring record of the work done by doctors, students, and nursing sisters on those early ambulance trains, and Colonel Moore admits that his words "do not really describe their untiring energy, skill, and devotion to the 67,000 of England's best who travelled to sea bases in France between August, 1914, and April, 1915, on the 'First Twelve Ambulance Trains'"

THE RED CROSS IN JAPAN

The second Oriental Red Cross Conference recently held at Tokyo was attended by ministers and members of the *Japanese Royal Family* The Red Cross is well supported in Japan, for two and a half of the 80 million inhabitants belong to it, there are a million members of the Junior Red Cross, and the annual revenue exceeds £800,000 The meetings were held under the joint presidency of Baron Hiroshima, President of the Japanese Red Cross, and of Judge Payne, chairman of the League of Red Cross Societies which organised the conference Discussion centred round the questions how by popular appeal more thoroughly to prevent disease, such as tuberculosis, how to advance child welfare, how to combat venereal diseases and the abuse of opium, and how to diminish other infectious diseases. Red Cross nurses, of whom a number have been trained at the international courses organised by the League at Bedford College, London are highly esteemed in Japan, and are always selected for service when illness arises in the Royal Family An impressive exhibit was that of the Imperial Institute for Research on Nutrition, housed in one wing of the new Red Cross building, in its well-arranged museum are shown wax models of foods, fresh, stale or tainted, suitable meals for different groups—e g, working men or nursing mothers, the cost of each meal being always indicated These, as well as models of kitchens, sanitary plumbing, and other public health exhibits, are intended to be taken round for demonstration in the provinces Disaster relief for great calamities had its origin in Japan in 1888, when the Empress called on the Japanese Red Cross to help on the occasion of the volcanic eruption of Mount Bandai To what extent this form of activity is being developed may be seen in the March issue of the *World's Health*, the monthly publication of the League of Red Cross Societies

A NEW YORK CLINIC FOR CANCER

A campaign is said to have been started by the New York Cancer Association to collect £1,000,000 to establish an institution for treatment and study of cancer At a cost of £700,000 the Association has acquired a twenty-seven storey building called Hudson Towers, which is to be the cancer centre, with a hospital of 400 beds, a clinic capable of caring for 500 patients a day, laboratories for research, and a department devoted to public education in the prevention of cancer Hudson Towers was originally designed for a hospital and has been standing unfinished for some time Most of the 400 beds will be free, or available at a nominal charge It is estimated that there are something like 25,000 cases of cancer in the greater New York area

The Sandoz Chemical Works, Pharmaceutical Department, have opened new offices at 5, Wigmore street, W 1, for the convenience of the medical profession in London

Pasteurisation of Milk —The Health Committee of Blackpool has adopted a recommendation that all milk going into the town, apart from Certified Milk in sealed bottles, shall be pasteurised For this purpose it should pass through a clearing house, where it should be placed in sealed bottles and then sold to consumers The medical officer was requested to prepare a report on the medical aspect of the question

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[1] The Birth and Early Days of our Ambulance Trains in France in August, 1914 With 5 illustrations By Colonel G A Moore C M G, D S O, M D. (A M S retd) John Bale, Sons and Danielsson, Ltd 1s

Lister Centenary Addresses.*

LISTER'S CONTRIBUTIONS TO PHYSIOLOGY.

By Sir CHARLES SHERRINGTON, O.M., F.R.C.P.,
WAYNFLETE PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF OXFORD; SOMETIME PRESIDENT OF THE ROYAL SOCIETY

THE invitation has been extended to me to offer a few words on the contributions made by Lister to physiology. Lister's very earliest scientific papers were all physiological Indeed he may be said to have entered by way of physiology his surgical researches which were to achieve so much

His first paper was on the Contractile Tissue of the Iris. Work done with the microscope which he used for the study of function rather than of form alone it appeared in 1853 in the first number of the first volume of the now well-known *Quarterly Journal of Microscopical Science* Lister was then 25 years of age. and that his maiden voyage of discovery should employ the microscope was but natural in the son of his father. Joseph Jackson Lister that remarkable man who leaving school at the age of 14 for the business he conducted so successfully yet found time to cultivate optics to such purpose as to be the main giver to the world of the achromatic microscope. Lister's earliest paper. this on the iris supplied the first full and correct description of the radiating muscle dilating the pupil It thus made a lasting mark upon its subject

Lister's second paper of a few months later, dealt likewise with involuntary muscle this time in the skin. where Koelliker had recently discovered the arrector muscles of the hairs: and this discovery Lister confirmed and in several respects extended.

ENTHUSIASM AND RESTRAINT.

We may be struck by the remoteness of these Lister's first themes both from surgery and from actual practice—they are simply academic I think we have to picture him a young man to whom what really mattered was engagement in research caring less what in particular the research might be, a young man so ardently curious about nature especially animate, nature that he turned enthusiastically to the problem that came first to hand And these papers in the simplicity of their text seem to reflect the Quaker upbringing of Lister's home There is already that sobriety of expression which characteristic of Lister all his life made yet the more impressive his own self-restrained statements of his great results later on. No man in his career had more excuse for. more justification for. hyperbole of phrase than had Lister. and no man ever indulged in hyperbole less than did he. It is therefore of significance when the young author allows himself an expansive adjective. as when he writes the grand discovery of plain muscle-cells' "the beautiful muscle of the iris" We feel these expressions to be from him not mere phrases An abiding interest of these youthful papers is their revelation of attributes in Lister's. so to say, original nature · and salient among these attributes are penetrative and faithful observation. catholic enthusiasm for research a restless testing of authority by observed fact. and unhesitating self-submission of opinion to whatever the truth might assert.

His third paper, still physiological and on the same theme smooth muscle followed some four years later. The cellular nature of that tissue had been denied · Lister returned to its further proof. and furnished it overwhelmingly Forty years afterwards the then foremost authority on this tissue wrote of this paper of Lister's as being still not only abreast but in several respects ahead of other subsequent papers on its subject

This work proved. however. to be Lister's farewell contribution to that particular theme. To him by then much had happened and was happening to compel his main interest elsewhere His scientific enthusiasm had indeed definitely orientated itself toward a chosen quest in the great field of the unknown His spirit of inquiry had found a direction of compelling interest to it . a lode-star of overpowering attraction In his own words written to his father he had fallen in love with surgery. And with that widely detailed and highly technical art and calling prospectively spread before him. the genius within him impelled him to study not so much this or that particular skill or difficulty. but the fundamental and all-pervading process of inflammation itself as being the prime and central problem for investigation as a surgeon

INFLAMMATION AND RELATED STUDIES.

Henceforward his physiological researches were merely side offshoots from that pathological study engaging his main thought Thus his paper on the nervous control or arteries distinguishing between the immediately local and the more distant effects of a stimulus and especially of an irritant stimulus upon the blood-vessels The local effect. he concluded. was independent of the nervous system. but with a surrounding zone of effect mediated by nerve a finding closely suggestive of present-day views Another paper was that on the pigment cells of the frog's skin the cells on which the animal's well-known colour changes depend Lister concluded the shift of pigment to be an active shift of the pigment grains within the cells themselves. and the way in which he consolidated and marshalled his evidence for that is a striking instance of his thoroughness as an investigator. There is little doubt that from detailed study of these pigment cells Lister gained much of that vivid and intimate conception of cell-life struggling against irritant agents which informed and directed his surgical strategy afterwards

Another physiological investigation by him concerned the inhibitory nature of certain visceral nerves He wrote ' I have been led to make an experimental inquiry into this so-called inhibitory agency' because it appears to me to have an intimate bearing upon the question how inflammation is developed through the medium of the nervous system at a distance from an irritated part His main conclusion was that inhibition resulted from more energetic action of those same nerves which when working mildly produce increased action Then and still more closely related to his pathological inquiries followed two papers on clotting of blood confirmatory as he himself remarks, of his conclusions arrived at about inflammation

THE MERIT OF LISTER'S EARLY RESEARCH

These papers and the year 1862 conclude practically the tale of Lister's researches devoted directly to physiology Of them the greater share were offshoots from his study of inflammation. They all possess the interest of revealing to us the features of their author in his earliest research career. Conspicuous in them is capacity for noting detail and the rarer power of sifting out from it the broader meanings Another of their qualities is a voracious appetite for observing for himself phenomena which many would be content to take on trust from the excellent descriptions already given by others Lister was satisfied by nothing less than seeing for himself and his eye never staled A further quality is their scientific courage which feared nothing except to miss the truth Moreover. even at this stage. though he might appear engaged on diverse problems. he was in fact centred upon one of which from his point of view the several were but several aspects Thus these early papers show that in reality quite early in his career he had not only found but had whole-heartedly flung himself upon what was to be his life-work and his life's problem—a problem we may almost subsume under the one broad term ' inflammation " That was the study which he was to follow to a practical solution so magnificently, and in doing so exhibit what these earlier paper had less opportunity for showing, the splendid power of establishing and systematically following to its consequences a great generalisation Hence from these earlier researches we can see spring that triumphant career of experimentation and observation, in the laboratory and the ward, which, with a really surprising speed of mastery, winged Surgery for that which she is to-day, a far-flighted angel of healing the civilised world over

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* A series of three discourses delivered in the Robert Barnes Hall of the Royal Society of Medicine on April 6th.

ENLARGED SCOPE OF PHYSIOLOGY

But these papers, valuable though they are, whose features we have been examining, far from exhaust the gift made by Lister to physiology In addition to and beyond them he enriched it with the contribution of enhanced means towards its most cherished aims He put into the hands of physiology for all time to come a superlative refinement of its method and made possible observations otherwise impossible Sir Berkeley Moynihan has eloquently insisted on the importance of surgery as a means to discovery In physiology, how could Pavlov have achieved his epoch-opening study of the digestive processes except by leaning upon Lister's surgical principles ? Or Ferrier initiated his study of localisation of cerebral function except by means of Lister's surgical principles ? How could the physiologists of Toronto less than four years ago have bestowed upon diabetic sufferers that merciful remedy insulin, had it not been for the legacy of operative principle and science bequeathed to them and to the whole world by Lister ?

And Lister's own words leave us in no doubt as to what a source of rejoicing it was to him that among benefits accruing from his work was this of an enlarged scope and power for physiology and experimental medicine He dwelt, both in public and in priva upon the need and importance of such experimentati for the progress of knowledge necessary to civilisati He rejoiced that he had contributed to its pow And, indeed, the experimentalist owes to Lister instrument of research whose beneficent future t boldest imagination may well halt to set limit to

And of the gifts to Lister to humanity one whi the experimentalist is ever mindful of with espec gratitude is that, while helping man to mastery ov disease alike for animal and man, he contributed t free that necessary experimentation from the inflictio of pain Man, sacrificing animal life as he does t satisfy the material needs of human kind, has the rig to regard the intellectual need impelling him t animal experimentation as means of saving huma and animal-kind from disease, as being justified i doing so He feels the more jusified in doing so, an takes that step with a clear conscience, becaus largely owing to Lister it can be taken withou inflicting pain or suppuration

Thus it is that through years to come, after, indeed it may be that the actual papers contributed t physiology by him may have become matter chiefl for the historian and the antiquarian, Lister will still receive unfailingly his meed of commemoration from the physiologist and experimentalist, and in a manner which to himself would of all ritual and offering have been the most congenial—namely, in their daily observance and trust of methods which he discovered and inculcated, and in their practice for the alleviation and prevention of disease It is therefore with peculiar gratitude that physiology brings its tribute of admiration and veneration to the memory of one great even among the greatest of the benefactors of humanity, Joseph Lister

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LORD LISTER AS A PATHOLOGIST AND BACTERIOLOGIST

BY WILLIAM BULLOCH, M D , F R S ,

GOLDSMITHS' COMPANY'S PROFESSOR OF BACTERIOLOGY,
UNIVERSITY OF LONDON

WE are met to commemorate the centenary of the birth of Lord Lister, and I have been asked to address this representative gathering on his contributions to pathological science Proud as I am of the great honour which has been bestowed on me, I am painfully conscious of my own imperfections and limitations for such a task My qualifications are twofold In the first place, I have read all Lord Lister's writings and have made a critical study of some of them, not only to discover their intrinsic merits, but to compare them with similar studies of his predecessors and contemporaries In the second place, I had the great privilege of knowing Lord Lister for 13 years, and in a manner which, considering the great disparity of our positions was, if I may presume to say so, almost intimate

As bacteriologist to the British Institute of Preventive Medicine I had to visit Lord Lister, the chairman of the Institute, almost weekly in order to report to him the progress of the work in the antitoxin department After I left the Institute, he frequently asked me to call upon him to discuss various scientific problems in which he was interested In this way I was a good deal in his company, and among the younger men of that day I probably saw as much of him as any one else When I first knew him, in 1895, he was 68, and I frequently saw him down to 1907 I last saw this great man in a bath-chair by the roadside at Walmer on a lovely sunny morning—Dec 26th, 1909 He was then 82, and was approaching the lonely end of his splendid career Both then and now he stands out to me as a most impressive personality I have known very many of the leaders in our profession at home and abroad during the last 30 years, and have no hesitation in placing him *facile princeps medicorum*

Up till old age he continued to be deeply interested in all medical advances and was almost young and boyish in his enthusiasm Although leading a busy and strenuous life he was still striving to keep abreast of bacteriological literature which at the time was pouring forth in an unbroken stream On several occasions I was hours in his company trying to unravel the intricate papers of Ehrlich and Bordet on the nature of hæmolysis or the constitution of diphtheria toxin Our hour of work finished he would relax into reminiscences of his life and aims, the difficulties he had to contend with, and how he had overcome them On one such occasion—the date was Oct 23rd, 1905—he referred in great detail to his work on pigmentation of the frog and on inflammation, and he said to me—I wrote the words down at the time—" if my works are read when I am gone, these will be the ones most highly thought of " These were not the numblings of senility, for he was still alert and fresh, but I took it to mean that he wished to be regarded as a scientist rather than as a surgical craftsman notwithstanding his pre-eminence in the latter branch of human activity It is therefore a peculiar pleasure to me to have to refer to some of these contributions which he himself valued

In estimating Lord Lister's scientific work it is essential to remember that he had no properly equipped laboratory as we understand it to-day His laboratory was his study in his private home, and perhaps the best part of his scientific work was that done in 11, Rutland-street, Edinburgh, during his first stay (1853–1860) in the Northern capital To this period belong the papers on pigmentation of the frog (1857), the function of the visceral nerves (1858), the coagulation of the blood (1858–1863), and the early stages of inflammation (1857) The construction of his antiseptic system took place mainly in the Glasgow period, 1860–1869, while his chief bacteriological studies are to be referred to the second stay in Edinburgh (1869–1877) when he resided at 9, Charlotte-square

The hours for his scientific work were early in the morning and far into the night, following a harassing day of active surgery in private or in hospital. He undertook his experimental work so that he might speak with first-hand knowledge of the themes he had to teach. Many of the problems, although of paramount importance practically, were obscure and complicated. Some were not capable of solution then, others have not yet been definitively resolved.

COAGULATION OF THE BLOOD

The coagulation of the blood has at all times excited wonderment, and the theories to explain the process have been innumerable and are still being brought forth. In this country very notable advances were made in the eighteenth century by William Hewson, who unfortunately died before he was 35. He proved that the red blood corpuscles were biconcave discs; he discovered the white corpuscles and performed a large number of admirable experiments to explain the process of clotting, although he never quite cleared up the mystery of its nature. His successors in the nineteenth century were not more happy. Coagulation was early studied by Lister as it was constantly being brought to his notice in connexion with closure of the vessels, putrefaction, and secondary hæmorrhage in surgical wounds. When Lister began, the prevailing theory was that of B. W. Richardson, who referred coagulation to the escape of ammonia which was believed in some way to hold the coagulative elements normally in solution. In a long series of experiments conceived and carried out in masterly fashion, Lister showed that the ammonia theory was untenable. He clearly saw the necessity for separating the nature from the cause of coagulation, and while baffled with the former he revealed by his experiments that the latter—the cause of coagulation—is really due to the influence exerted on the blood by the contact, even momentarily, of ordinary matter of some kind. He considered that this contact brings about a reaction between the solid and fluid constituents of the blood so that the corpuscles imparted to the liquor sanguinis the disposition to clot. As regards the cause of clotting it cannot be said that we have materially advanced during the 70 years since the publication of Lister's work.

EARLY STAGES OF INFLAMMATION.

Another basic pathological process which he studied was inflammation. The extraordinary changes which we call inflammation have always attracted attention, and the explanations given constitute a large part of the history of medical doctrines. When Lister began to study inflammation there was already a considerable mass of accurate knowledge on the subject. The older pathological anatomy so ably created by Morgagni and followed up by the French school down to the time of Cruveilhier, was being replaced by the new knowledge which accrued from the discoveries of Schleiden and Schwann. At the time Edinburgh was a great centre of medical activity and a nursery of medical talent. Many of her graduates migrated across the border to attain fame in the arenas of the South. I need only mention names like Richard Bright, Hodgkin, Thomas Addison, C. J. B. Williams, Marshall Hall, and two who had a marked influence on Lister's life at University College and afterwards, I refer to William Sharpey, and the exceedingly able, if eccentric, Wharton Jones. Their work was carried forward by Augustus V. Waller and the little known but highly successful worker William Addison. In the inflammatory process the margination of the leucocytes was taught by C. J. B. Williams and W. Addison in 1841. In 1846 Volney Waller rediscovered the wonderful process of emigration of leucocytes, previously known to Dutrochet (1827). In a most scholarly manner Wharton Jones summed up all the knowledge on inflammation down to 1846, and himself gained the Astley Cooper Prize in 1850 for his splendid essay on the pathology of inflammation.

When, therefore, Lister began to study the process he was traversing ground already trodden. He early realised, however, that much that had been done concerned the later stages of inflammation, whereas its real essence was most likely to be found by analysing the earliest changes. Examining the frog's web and the bat's wing he took elaborate precautions that they should be in a perfectly healthy condition. By the application of irritants he passed to the study of the morbid, and investigated especially the aggregation of the red corpuscles, their increased adhesiveness, and the structure of the arterioles and capillaries. He found that the capillaries alter in size, but referred the change to something inherent in their elasticity. While admitting the existence of contractility in the capillaries, modern writers have not accepted his explanation. Lister regarded irritants as acting in a twofold manner. The primary effect was a dilatation of the vessels, brought about through the influence of the nervous system and not limited to the *locus* of the irritant. The secondary effect, on the other hand, was the direct outcome of the irritamentum itself in consequence of which the blood becomes altered physically. The red discs become more adhesive, they accumulate in masses, and may bring about a condition of actual stasis. Strange to say, Lister made no reference to diapedesis of the leucocytes and probably missed it altogether. The earlier discovery of Waller had left apparently little impress on the knowledge of the day, so that when Cohnheim described diapedesis in detail in 1867 the discovery was looked upon as something altogether new. It is to Lister's credit that he discussed inflammation from a new point of view, which Cohnheim nine years later carried to a conclusion.

BACTERIOLOGY.

When Lister embarked on his extended study on the cause of suppuration and the complications which follow surgical operations, his previous work on blood and inflammation was a great help to him. He was continually groping for the causes of the surgical disasters which were habitually happening, but light began to peer through the obscurity. This was early during his Glasgow term. In 1865 his attention was directed by a colleague to the work which had been done on fermentation and putrefaction by Pasteur from 1857 onwards. This work came upon him as a revelation, and almost at once he grasped the full significance of the Frenchman's discoveries for surgery. Ten years later he tells us specifically that the work of Pasteur "long since made me a convert to the germ theory, and it was on the basis of that theory that I founded the antiseptic treatment of wounds in surgery."

Although he frequently reiterated his indebtedness to Pasteur it is, I think, a vulgar error to regard Lister as a mere imitator of his great French contemporary. As early as 1861, and before his acquaintance with Pasteur's papers, he was getting near the truth about suppuration, and afterwards he advanced beyond the point where Pasteur had led him. From now on he became ardent in the pursuit of bacteriology. This was about 1870, when the study of microbes had scarcely emerged as a distinct science. At the time there were two conflicting views. The one, supported particularly by the eminent botanist Ferdinand Cohn, held that bacteria exhibited a constancy in form which might be used as a basis of their classification into genera and species. According to the other view, there is no such morphological stability, but rather a pleomorphism whereby one and the same microbe could assume different forms according to the environment. In his earliest bacteriological work in 1873 Lister ranged himself among the pleomorphists, and it has to be admitted that he suffered shipwreck when he stated that Ehrenberg's and Cohn's classification was "entirely untrustworthy." Lister's mistake was one made by a great many others at that time, and serves but to show how unwary the earlier bacteriologists were of the pitfalls lying in their path. There exists an exceedingly interesting correspondence which passed between Lister and Pasteur on the subject. Pasteur clearly saw where Lister had erred and advised him to a practical solution so magnificently, and in doing so exhibit what these earlier paper had less opportunity for showing, the splendid power of establishing and systematically following to its consequences a great generalisation Hence from these earlier researches we can see spring that triumphant career of experimentation and observation, in the laboratory and the ward which, with a really surprising speed of mastery, winged Surgery for that which she is to-day, a far-flighted angel of healing the civilised world over

ENLARGED SCOPE OF PHYSIOLOGY

But these papers, valuable though they are, whose features we have been examining, far from exhaust the gift made by Lister to physiology In addition to and beyond them he enriched it with the contribution of enhanced means towards its most cherished aims He put into the hands of physiology for all time to come a superlative refinement of its method and made possible observations otherwise impossible Sir Berkeley Moynihan has eloquently insisted on the importance of surgery as a means to discovery In physiology, how could Pavlov have achieved his epoch-opening study of the digestive processes except by leaning upon Lister's surgical principles ? Or Ferrier initiated his study of localisation of cerebral function except by means of Lister's surgical principles ? How could the physiologists of Toronto less than four years ago have bestowed upon diabetic sufferers that merciful remedy insulin, had it not been for the legacy of operative principle and science bequeathed to them and to the whole world by Lister ?

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And of the gifts to Lister to humanity one which the experimentalist is ever mindful of with especial gratitude is that, while helping man to mastery over disease alike for animal and man, he contributed to free that necessary experimentation from the infliction of pain. Man, sacrificing animal life as he does to satisfy the material needs of human kind, has the right to regard the intellectual need impelling him to animal experimentation as means of saving human and animal-kind from disease, as being justified in doing so He feels the more jusified in doing so, and takes that step with a clear conscience, because largely owing to Lister it can be taken without inflicting pain or suppuration

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Up till old age he continued to be deeply interested in all medical advances and was almost young and boyish in his enthusiasm Although leading a busy and strenuous life he was still striving to keep abreast of bacteriological literature which at the time was pouring forth in an unbroken stream On several occasions I was hours in his company trying to unravel the intricate papers of Ehrlich and Bordet on the nature of hæmolysis or the constitution of diphtheria toxin Our hour of work finished he would relax into reminiscences of his life and aims, the difficulties he had to contend with, and how he had overcome them On one such occasion—the date was Oct 23rd, 1905—he referred in great detail to his work on pigmentation of the frog and on inflammation, and he said to me—I wrote the words down at the time—" if my works are read when I am gone, these will be the ones most highly thought of " These were not the mumblings of senility, for he was still alert and fresh, but I took it to mean that he wished to be regarded as a scientist rather than as a surgical craftsman notwithstanding his pre-eminence in the latter branch of human activity It is therefore a peculiar pleasure to me to have to refer to some of these contributions which he himself valued

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Coagulation of the Blood

The coagulation of the blood has at all times excited wonderment, and the theories to explain the process have been innumerable and are still being brought forth. In this country very notable advances were made in the eighteenth century by William Hewson, who unfortunately died before he was 35 He proved that the red blood corpuscles were biconcave discs, he discovered the white corpuscles and performed a large number of admirable experiments to explain the process of clotting, although he never quite cleared up the mystery of its nature His successors in the nineteenth century were not more happy Coagulation was early studied by Lister as it was constantly being brought to his notice in connexion with closure of the vessels, putrefaction, and secondary hæmorrhage in surgical wounds When Lister began, the prevailing theory was that of B W Richardson who referred coagulation to the escape of ammonia which was believed in some way to hold the coagulative elements normally in solution In a long series of experiments conceived and carried out in masterly fashion, Lister showed that the ammonia theory was untenable He clearly saw the necessity for separating the nature from the cause of coagulation, and while baffled with the former he revealed by his experiments that the latter—the cause of coagulation—is really due to the influence exerted on the blood by the contact, even momentarily, of ordinary matter of some kind He considered that this contact brings about a reaction between the solid and fluid constituents of the blood so that the corpuscles imparted to the liquor sanguinis the disposition to clot As regards the cause of clotting it cannot be said that we have materially advanced during the 70 years since the publication of Lister's work.

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Bacteriology.

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Like Pasteur Lister had the supreme faculty of seeing as if by instinct the exact experiment required to eliminate an element of doubt or to advance ahead. He was a master of the experimental method—a rare and precious gift which the Abbate Spallanzani truly said "has always been confined and always will be confined to the few."

Conclusion

And now I am at the end. No one could come into contact with Lister without being impressed by his noble personality, his magnanimity, his liberality, and his modesty. His aims were of the loftiest kind and probably *no medical man ever kept more* steadfastly before his gaze the covenants of the Hippocratic oath. He venerated his teachers, he taught his art to his pupils, he kept nothing secret from his profession and followed that system which, according to his ability and judgment he deemed best in the interest of his patients. With purity and holiness he passed his life and practised his art.

When one looks down the long vista of time and contemplates the art of medicine three names stand prominent, and we should all feel pride in our English stock which gave birth to Harvey to Jenner, and to the great Lister—a name to resound for ages.

LISTER AS SURGEON.

By Sir BERKELEY MOYNIHAN, Bart.,

PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

Seldom is a great discovery the product of one man's mind. In the work of other men it has ancestors, forerunners possessing one or more attributes whose final and felicitous association within new work constitutes new truth. When that new truth is fully disclosed its relation to many other truths familiar *to all for perhaps many years and in many associations* becomes clear. The claim may then arise that those who have revealed isolated and antecedent truths have priority in the final discovery. Such truths are however only progenitors with no claim to be regarded as their own descendant, the new truth itself.

Pre-Listerian Surgery

The immortality of Lister whose centenary we commemorate to-day, is due to discoveries which did for the craft of surgery what John Hunter had done for its science. The oldest human remains bear evidence of surgery. Before Lister came operations had been relatively few, because of their heavy mortality and their almost insupportable burden of terror and of suffering. Every operation risked the life of the patient from one single cause putrefaction in the wound. So frequent was this that it was always expected, and whenever it appeared no man might foresee or measure its consequences. Evidence of this we find on almost every page of the old text-books and in the biographies of the great surgeons. It is startling to read that when in the year 1821 Astley Cooper operated upon George IV for a small sebaceous cyst on the head so tortured was he by anxiety lest erysipelas or pyæmia might develop that he sought to put upon others the responsibility of the operation, on Cline on Everard Home on anybody but himself. He speaks of the operation in terms which to us now appear absurd fearing that "it might by possibility be followed by fatal consequences." He says "I saw that the operation if it were followed by erysipelas would destroy all my happiness and blast my reputation," and "I felt giddy at the idea of my fate hanging upon such an event" and again, "I am certain that if anything happened to the King that at any rate, I should leave London and live in retirement." It is hard to believe that a surgeon eminent enough to be chosen for service to the King should be so deeply moved at the prospect of what was to him, as to us technically the simplest of operations. The exercise of the art of surgery brought terror then where it now brings joy, to surgeon no less than to patient.

Steps in the Discovery

Lister's discovery was very gradual. His earliest interests in surgical inquiry were concerned with *inflammation*, its cause, its *nature* and possible methods of controlling it. *In this as in many of his* earlier investigations Hunter was both inspiration and guide. His paper on "On the Flow of the Lacteal Fluid in the Mesentery of the Mouse" published in 1857, but based on researches begun in 1853, is an extension of Hunter's experiments on absorption. His studies on coagulation of the blood began with a investigation on the blood in the veins of sheep's "trotters" obtained from the slaughter-house. By devising neat and critical experiment he was able to carry knowledge of coagulation of the blood far beyond the point which Hunter and Hewson had *attained* a century before. Yet the methods he employed were clearly modifications of those used by his great forerunner. By such investigations as these Lister was training himself, but his chief interest lay always in the problem of the healing of wounds. When, therefore he learnt of Pasteur's researches his mind was open to the new truths and expectant of them. Before the British Medical Association in Dublin in 1867 he said:—

> "In the course of an extended investigation into the nature of inflammation, and *the healthy and* morbid conditions of the blood in relation to it, I arrived several years ago at the conclusion that the essential cause of suppuration in wounds is decomposition brought about by the atmosphere upon blood or serum retained within them, and, in the case of contused wounds, upon portions of tissue destroyed by the violence of the injury. To prevent the occurrence of suppuration with all its attendant risks was an object manifestly desirable, but, till lately apparently unattainable, since it seemed hopeless to exclude the oxygen which was universally regarded as the agent by which putrefaction was effected. But when it had been shown by the researches of Pasteur that the septic properties of the atmosphere depended not on oxygen or any *gaseous constituent*, but on minute organism suspended in it, which owed their energy to their vitality, it occurred to me that decomposition in the injured part might be avoided without excluding the air by

applying as a dressing some material capable of destroying the life of the floating particles"

Lister's first step was therefore a realisation of the truth that decomposition in wounds depends upon the activity of living micro-organisms, his second which followed immediately, was based upon the belief that such organisms might be destroyed in the wound, or as they were about to enter the wound, his third and last, which came more slowly was founded upon the hope that the organisms within the field of operation might be destroyed before they entered the wound.

Around every step of his advance fierce controversy raged. The scepticism and hostility of early contemporaries was stupid unimaginative and petty. The history of science is not only the story of new truths and their slow emergence from error, it is a recital of bitter and vexatious opposition from those who should have been the first to acclaim and to welcome the new vision. Only a few weeks ago we learnt once again of the diffidence of Isaac Newton in the publication of discoveries made years before, his reluctance was due in part, perhaps, to a native modesty and indifference to the applause of others; in part also to shrinking of a sensitive nature from the acrimony and coarseness of controversy.

The rank hostility of Riolan to Harvey, the disdainful incredulity of Liebig at the discoveries of Pasteur, are in direct intellectual relation to the revolt of Calvin at the discoveries of Servetus, the animosities of the Church which martyred Giordano Bruno, the threat of torture which subdued the aged Galileo, and all that long record of sinister events which proclaims the inveterate hostility of impervious minds to novelty. For such minds novelty is always error, truth is bent through an angle of refraction as it enters them. Lister's answer to indifference, opposition, and denial was unfaltering continuance in inquiry and experiment, and in the demonstration day by day, and case by case of changed results.

The Heavily Infected Wound

Few, if any, now living remember the full horror of the old days. But an experience not dissimilar awaited us in the earliest days of the Great War. A pestilence of infection to which we were wholly unaccustomed turned our faces towards the early struggles of Lister. On all sides we heard that our inability to check a raging suppuration in a heavily infected wound proclaimed the failure of Lister's methods. So to Lister we turned again, only to realise much more acutely how the problems which faced us had been his problems, how our experience, horrible in its new revelation had in the first years of his practice been his daily experience. Reading Lister's works with clearer perception and new understanding of the difficulties by which he was confronted, our admiration of his patience insight, and courage glowed into greater reverence than ever before. Lip service we had long given to the founder of the new era; we were now compelled to realise that Lister is indeed the man who has saved more lives than all the wars of all the ages have thrown away, the man who has changed the face of surgery, the one man who has in truth created if not a new art, at least a new and safe and illimitable opportunities for the practice of the old art.

The first conception in Lister's mind in respect of treatment was that the organisms within the wound, and those entering the wound, might be destroyed by some chemical agent the nature of which was to be determined by a series of experiments. From time to time changes were made as search brought to light some new chemical substance more active in destroying bacteria and less harmful to the living tissues of man. The search is not ended yet. Up to this moment it has engaged the interest of such men as Dakin, Browning, and J B Cohen, and no doubt it will long continue. The problem however is not merely that of accomplishing highest bacterial destruction with lowest cellular injury: it is rather one of augmenting the natural powers of cells and of serum to subdue and destroy bacteria and their poisons. Lister. I feel confident realised all this to a greater degree than many of his successors. Godlee in his life of Lister makes this quite clear. Though the earliest efforts were concerned with the abatement of existing decomposition of wound discharges, it was not long before the problem of the prevention of infection became paramount. It is beyond dispute that Lister clearly realised the distinction between the "prophylactic" and the "therapeutic" uses of chemical agents in surgery. We know now that the old quarrel as to the relative merits of the "antiseptic" and the 'aseptic" methods was senseless and jejune; for Lister was indubitably the parent of both, if, indeed there are really two methods. No surgeon ever practised with success a method in which agents for the destruction of organisms were omitted. Aseptic surgery is the wise practice of antiseptic surgery. There is a difference in detail, not in ideal, or in fundamental truth.

Pasteur and Lister

We have no need to discuss the relative merits and claims of Pasteur and Lister. It is true that without Pasteur there would have been no Lister at the time when Lister was. Pasteur set out to discover the truth as to spontaneous generation and by crucial and magisterial experiment settled that problem once for all. While at Lille, in the centre of a district of many distilleries the problem of fermentation engaged his mind, and the assertion of Liebig foremost among chemists of his day, that it was "a change in organic fluids and tissues set in motion by the access of oxygen" was shown to be incomplete. The genius of Lister lay in immediate realisation of the fact that the biological truths established by Pasteur might be applied to other circumstances. His mind was prepared for the new vision by his physiological training. I make no attempt to exalt Pasteur by saying that Lister's work was corollary to his, nor to belittle Pasteur by speaking of his ignorance of the full effect of his work. Let the world be thankful for both. We who are within the profession of medicine have once again to learn that progress depends not only upon our own efforts in the discharge of our daily task of healing but upon an association as intimate as can possibly be with every aspect of biology.

Results, Immediate and Remote

The consequences of Lister's work are many and far-reaching. The immediate result was of course the complete abolition of many of the dangers attaching to the most certain and most dreaded peril of all infection in the wound extending to other parts, causing severe and protracted suffering, even grave risks to life itself. But when the few operations then practised became safe, it was obvious that other operations might be attempted. The result was that procedures condemned as "murderous," the practice of which should, in the opinion of high authority, lay a man open to a charge of manslaughter were greatly increased in number as soon as it could truthfully be claimed that the risk of operation was definitely less than the risk of inaction. The most exemplary instances were found in the practice of abdominal surgery. Ovariotomy, condemned by highest authority as homicidal (the Governors of King's College Hospital in 1877 had forbidden the staff to undertake it) became so safe in expert hands that neither patients nor surgeon hesitated in the choice of operation.

In all new advances in surgery it is only the patient whose disease has reached a high development threatening disability, suffering, or death, who is submitted to operation; the cases with the greatest risk already attached to them are the first to undergo adventurous treatment. As the safety of surgery is shown in these, similar cases are treated but in an earlier stage, a stage in which the surgical risks are less, the convalescence quicker, the mortality lower. Ultimately a fatality occurs only in the exceptional case, from causes connected rather with the original disease than with the operation practised. In my days as a resident in hospital ovariotomy was regarded as an operation of utmost gravity, and was performed with much ceremony in private wards and with special nurses. McGill, who led me by the hand along the path of surgery, always had a Turkish bath in the afternoon of the preceding day, and operated at an unusually early hour in the morning. Some mammoth tumours were removed, tumours which at times greatly outweighed what was left of the patient; indeed, we removed patient from tumour rather than tumour from patient. From ovariotomy an advance was made to the treatment of other pelvic conditions. Fibroid tumours of the uterus were eventrated and a constricting band of metal applied to the cervical stump which was brought up into the wound. When for the first time I returned the pedicle to the abdomen after the operation of hysterectomy, our obstetric physician, Dr. Braithwaite, quailed with horror at such temerity. The conquest of other disease of the abdomen was soon inaugurated; the campaign owed almost everything to those who had practised what we now call gynæcology. Spencer Wells removed the enlarged spleen from a patient whose tumour he had believed to be uterine; and a condition of tuberculous ascites miscalled "ovarian cyst" improved so much after the release of the fluid that similar cases were quickly claimed for surgical treatment.

The whole abdomen soon became the province of the surgeon, whose activities also rapidly extended to the cranial and thoracic cavities, so that at the present day neither technical difficulty nor any danger in the trauma inflicted prevents the surgeon from dealing with almost any lesion, wherever it may lie, or whatever its nature. There is scarcely any organ which cannot be attacked; there is no inherent and inescapable risk in any technical procedures.

SURGERY AS AN AVENUE OF RESEARCH

An extension of safe operative measures within the cavities, especially within the abdomen, has resulted in a complete revision of our knowledge of the earlier structural changes in many organs attacked by disease, and of the clinical manifestations which those changes produce. Surgery has proved an implement of research; it is indeed the most powerful of all, though this fact is not yet fully realised, nor is adequate use yet made of it. In the mortuary period of pathological knowledge only the most advanced stages of disease, those stages which at last proved fatal, could as a rule be examined. The final symptoms of the terminal changes in structure were, not perhaps the only, but they were certainly the chief, interest of the clinician; little was known of the dependence of earlier symptoms upon tissue changes. Pathologists and physicians alike were incredulous as to the truth or significance of much of the new knowledge which the surgeon was daily accumulating as the result of his widening observations. Even to-day the physiologist and physician do not appreciate how much is to be learnt at the bedside or in the operation theatre.

As an implement of research surgery has been generously used by the physiologist in his experiments upon animals. Perhaps the most entrancing exploit of all was that inaugurated in this country by Ferrier and pursued by Macewen, Horsley, Sherrington, and others, by which the functions of the various parts of the nervous system have been elucidated. There is something of enthralling interest in the story of the localisation of function in the cerebral cortex, in the realisation that in the convolutions of the brain exist allotments each with its own highly specialised and exclusive function. The work of the surgeon upon the abdominal viscera, his discoveries concerning not only changes of structure in various disease, but also disorders of visceral reflexes, and symptoms associated with these, have been not less arduous, nor less interesting, and even more fruitful in the clinical study of diseases, and in the relief of human suffering.

The capacity of the surgeon to enlarge the area of his operation has been used with gratifying success in the treatment of accessible cancer. The lines of extension of this disease have been the subject of inquiry by pathological anatomists, who have studied afresh not only the lymphatic systems of the various organs affected, but also the exact lines along which the cancer cells may drift or grow. The work of Sampson Handley on the breast and of Ernest Miles on the rectum are worthy of special commendation. Since we know beyond dispute that cancer is primarily a local disease, we know also that every accessible cancer is curable if operation is practised in the early stages of disease. That is not the least of the debts we owe to Lister. It is his work that has permitted us so to plan our operations that not the growth alone but also all those parts, such as lymphatic glands into which the growth makes haste to extend, can all be removed in one mass, and that infection is now the least of our anxieties.

ACCOMPLISHMENT

We may almost claim that the full effect of Lister's work is now accomplished. We know that for all time operations of every kind may be practised without the grave risks that formerly were prohibitive. The art of surgery is far in advance of all the sciences upon which its future progress depends. Until they stand abreast, or even advance ahead, the progress of surgery will be slow. The great search for us all must now be for the methods of applying new discoveries in other sciences, physiology, biochemistry, pathology, physics, and the like to the study of disease.

Many lines close in the dial's centre. From all the vast periphery of our surgical world messages of gratitude and of homage converge upon Lister to-day. Lister made possible the new surgery, beyond all question the most beneficent art mankind has ever practised. So long as there are men to live and suffer, so long will Lister be there to heal them, to hold the gates of life ajar.

To the honoured dead we raise our monuments, some cast in bronze, some graven in stone; some like that of immortal Hunter, begun in a man's lifetime, the work of his own hands, are enlarged and lovingly enriched through generation after generation by those who labour in the master's cause. On the roll of honour which in letters of gold bears the names of the saviours of mankind no man is more worthy of remembrance than Lister. His living and enduring memorial is a great, and ever greater multitude of men, women, children of every nation of every race of every creed through his mercy, and by the skill of his most gentle hand relieved from infirmity and suffering and sorrow, and made for a time triumphant over death itself.

It is immortal Lister we salute to-day, the supreme benefactor of mankind.

LONDON CHILDREN'S HOSPITALS.—The Prince of Wales last week opened a new wing of the Belgrave Hospital for Children, Clapham-road, S.W., of which he is patron. This addition completes the hospital as originally designed, but it is hoped soon to provide a nurses' home and a larger out-patients' department. During the past four years £40,000 has been spent in the building and equipment of two new wings. The institution, which is situated near the Duchy of Cornwall estate, is the only hospital for sick children in South-West London south of the Thames.—At the annual Court of Governors of the East London Hospital for Children, Shadwell, it was stated that the year's deficit of £2000 was largely owing to the obscure position of the institution, "hidden away in the East-End, among high buildings, while bigger hospitals on the main roads have a daily advertisement."—It is hoped to open the Princess Louise Kensington Hospital for Children in September next, and the board of management are about to appoint the honorary medical staff. Upon opening there will be 15 beds; in the near future there will be 30, and eventually the number will be increased to 50. From the beginning there will be a large children's out-patient department, and a similar department for women.

Lumleian Lectures

ON THE

MUSCULAR MECHANISM OF RESPIRATION AND ITS DISORDERS.

The Second Lumleian Lecture delivered before the Royal College of Physicians of London on March 24th

BY SIR CHARLTON BRISCOE, BART,
M.D., F.R C P. LOND,
PHYSICIAN TO KING'S COLLEGE HOSPITAL AND TO
ST JOHN AND ST ELIZABETH HOSPITAL.

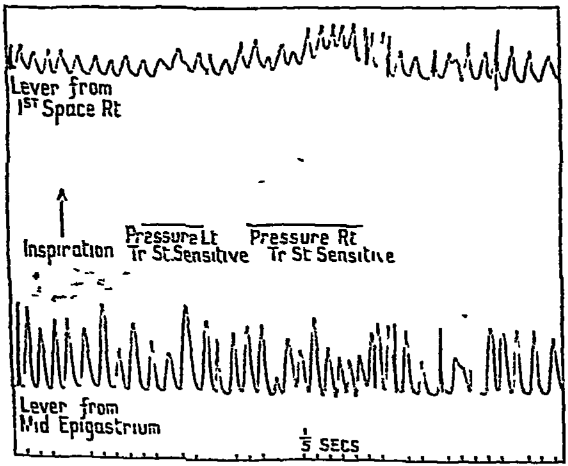
LECTURE II ‡

IN this lecture I propose to deal with certain stimuli which produce an alteration in normal physiological breathing This alteration mainly occurs in the level or "postural tone" of the different parts of the respiratory mechanism, and is shown by a diminution or by an increase of relaxation at the end of expiration The stimuli referred to may be transitory or persistent and of long standing, and may be considered to be of the nature of reflexes Where their action is intermittent the position adopted at the end of expiration will differ accordingly.

PAIN REFLEX

The first of these to be considered is the response to the sensation of pain experienced anywhere in the body The accompanying figure illustrates the result of pressure upon a tender muscle In this instance the triangularis sterni on the left side was sensitive, that on the right was still more sensitive The reaction from pressure on either of these muscles was similar, but more marked in the case of the right muscle than of the left When pressure was made with the little finger on the right muscle between the ensiform appendix and the costal margin there was a certain diminution of the movement of the epigastrium, and associated with it an increased movement and an elevation of the level of the thoracic tracing (Fig 1). This indicates therefore, that the relaxation in expiration, which would allow the thorax to resume its normal position, was inhibited—in other words, that a condition of persistent contraction or tone developed in one of the muscles which holds the thorax elevated. Digital examination of these muscles showed that this elevation was due to a persistent contraction or lack of relaxation in the anterior scalene muscle. This is but an illustration of the general experience of pain producing a prolonged gasp.

FIG. 1

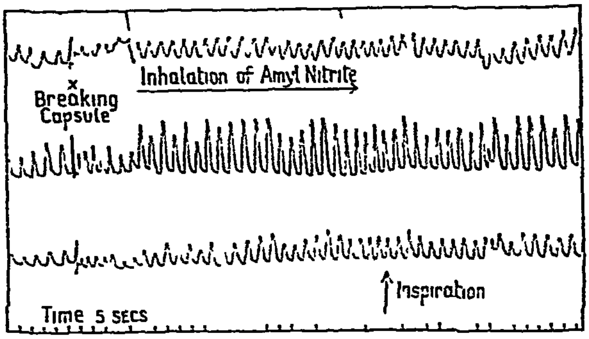


Pressure on a tender muscle produces an elevation of the level of the thoracic tracing

EMOTIONAL REFLEXES.

A similar alteration in mode of breathing occurs as the result of emotions During these observations one of the bugbears encountered was the diminution in the respiratory movement which almost invariably accompanied prolonged examination of an individual who remained in the same posture for a period of half an hour or more Sometimes this went further and the subject went to sleep * When this occurred it was constantly observed that the movement of the thorax was greatly diminished, or ceased, while that of the epigastrium was affected similarly, but to a less extent. Occasionally the individual waked up dreaming In the case of a boy of 16 who was the subject of investigation, a dream of a pleasurable nature occurred * He dreamed that he was at home in bed. This tracing shows an enhanced movement of the thorax which, at the same time, is accompanied by an elevation of the level of the tracing, again indicating that the *posture existing at the end of the expiratory phase* was higher than that during sleep, or before going to sleep

FIG. 2



Mental effect of administration of amyl nitrite The effect of hearing the capsule broken is to cause a rise in the level of the thoracic tracing The upper tracing refers to second left intercostal space, the middle tracing to the epigastrium, and the lower to the hypogastrium

This alteration occurs also very commonly as the result of unpleasant affects If, for instance, a medical student has agreed to submit himself to the inhalation of amyl nitrite, the same increased thoracic movement and elevation will occur when the glass capsule is broken (Fig 2) Or, if the investigation consists in the hypodermic injection of adrenalin, when the arm is held before inserting the needle, similar reactions are noted And again when there is suspicion as to the nature of the investigation elevation of the thorax is observed *

The group of cases termed "functional," in which may be included the anxiety neurosis, exhibit a prolonged emotional state characterised by a persistent reflex and results in an increased movement of the thorax foreign to the type of chest * Thoracic breathing is the habit of the functional case In these cases it is not possible to say positively that elevation has occurred, but it is a reasonable deduction from the maintenance of a continuous increased level, associated with an increased movement such as commonly occurs in the instances mentioned above It is, of course, impossible in such cases to obtain a tracing of the actual commencement of the condition It can, however, be observed that there is a persistent tone in the scalene muscles, and that the intercostal muscles of the upper spaces do not relax completely during expiration This is more noticeable on the left side than on the right

Darwin [19] showed that in some animals certain emotions caused an extension of the spine, and in my first lecture I showed that such extension of the spine is accompanied by an increased movement in inspiration of the thorax at the expense of the diaphragm Such, however, does not appear to be a full explanation, for in my observations given above there has been, so far as can be told, no alteration of the spine during the period of investigation The condition would be explained by a diminished relaxation of the scalene, an increased contraction of this muscle accompanied by increased stretch in the upper intercostal muscles †

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‡ Lecture I. appeared on March 26th

* The asterisks throughout refer to points demonstrated by means of lantern slides

In my first lecture I showed a tracing of the effect of increasing the tension on the anterior scalene, which promoted an increased movement of the clavicle and upper ribs

Conscious Dyspnœa

It is a common experience that the conscious appreciation of shortness of breath is accompanied by an elevation of the chest, and this elevation must be produced by a similar mechanism Thus it appears that pain, emotion, transient or prolonged (as in functional cases), and conscious dyspnœa each tend to produce an alteration in the manner of breathing in the nature of a shift towards the thoracic type This is brought about by a diminished relaxation of certain muscles—e g , scalenes and upper intercostals—and leads to a raising of the expiratory level of the thorax The consequent stress on these muscles appears to me to be a factor of great importance in the pathology of the mechanism of respiration

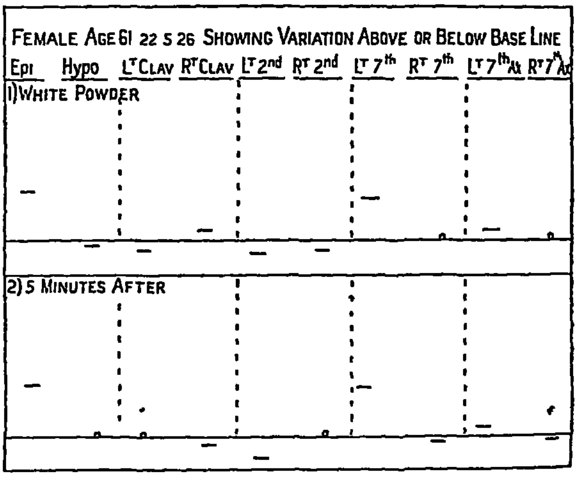
VISCERAL REFLEXES

Elevation of the thorax, especially affecting the upper part has been illustrated in the foregoing instances I propose now to deal with certain special stimuli leading to a diminished postural tone of the diaphragm shown by elevation of the expiratory level, an effect the very opposite of that recorded for the scalenes, an inhibitory action or one of increased relaxation These stimuli arise from viscera, and though the first example clearly shows an important associated effect on the thorax, with which I have chiefly to deal, the essential change is clearly in the diaphragm

Gastric Reflex

In the course of the main investigation I thought it advisable to explore the question of gastric distension, to see whether any light would be thrown on the mechanism of respiration under these circumstances The first observations were made by taking tracings of the respiratory movements, then sending the individual to get his dinner, following which a second tracing was made This showed that the epigastric movements were somewhat increased * It also showed, however that there was a tendency to diminish the movements of the upper part of the chest, and to increase slightly those of the lower part In view of these changes it was necessary to make a continuous investigation, for it is difficult as I have indicated above to get the subject into precisely the same position on each occasion and such differences might well have arisen from slight alterations of posture Accordingly the old method of distending the stomach with a seidlitz powder, in which the two halves were given separately, was adopted, and a continuous tracing was obtained This showed an elevation of the epigastrium following the rapid distension of the stomach * It also showed that the thoracic wall on the left side was protruded to a relatively great degree amounting in some instances to a total movement of two inches The record was taken from (1) the clavicle, indicating elevation of the thorax, (2) one of the upper ribs selected from the second to the fourth, (3) one rib from the lower chest complex sixth to the eighth rib and (4) a point taken in the axilla between the eighth and twelfth ribs, these four points being combined to form a single tracing of the left or right side The right side always moved outwards to a less extent, and sometimes not at all A further stage in the investigation necessitated the introduction of a series of U tubes containing liquid into the recording apparatus, in order to estimate the alteration occurring at each of the four points mentioned, and in the epigastrium and hypogastrium

FIG 3.



Changes occurring after the administration of a seidlitz powder in two separate portions Short lines indicate the relative elevations or depressions above and below base line

By this means certain constant phenomena were found (1) in the elevation of the epigastrium, and (2) the forward movement, eversion, of the lower chest complex on the left side As regards the movement of the right lower chest complex, this varied, as a rule, very little or no protrusion occurred, but in any case, the movement was considerably less than that of the left side In the lower axilla the effects varied In some cases eversion was found to occur, the left side being more affected than the right, in others little or no change was observed, in a few the right side was actually inverted The hypogastrium sometimes was protruded, but generally remained near the initial level The effect on the clavicles (as indicating the scalene action) varied, as did also the level of the four upper ribs In general, there was a depression of both these points, and on both sides, but sometimes in elderly people the clavicles, especially the left, were elevated The eversion is least marked in normal young adults * It is more marked in the middle-aged * (Fig 3), and in the elderly * (Fig 4) is supplemented to some extent by an elevation of the left side of the chest as a whole Functional cases show a very marked eversion with elevation of the left chest—a summation effect The constant alterations shown were (1) an eversion of the left lower part of the thorax, as indicated by the protrusion of the sixth, seventh, or eighth rib in the nipple line, and (2) the elevation of the epigastrium

Dr Livingstone investigated the effect of giving the seidlitz powders to an individual while under X ray observation He traced the level of the diaphragm on the screen, then gave the seidlitz powder, and four minutes later again made a tracing Meanwhile the subject was not allowed to alter his position This was done in ten cases The results are briefly as follows There was a rise in the expiratory level of one or other side of the diaphragm in eight cases, a fall in one, and no change in the tenth This level was on the right side raised in five instances, lowered in one, and unaltered in four On the left side the expiratory level was raised in seven, lowered in two and unchanged in one The degree of inspiratory descent of the same part was on the right increased in three, diminished in two, and unchanged in five On the left side there was an increase of movement in two, a diminution in two, and no change in six. The prevalent changes, therefore are an elevation of the expiratory level of the diaphragm, more marked on the left side and no change in the degree of movement In an antero-posterior view of the chest under X rays a forward movement of the lower rib complex would not be observed

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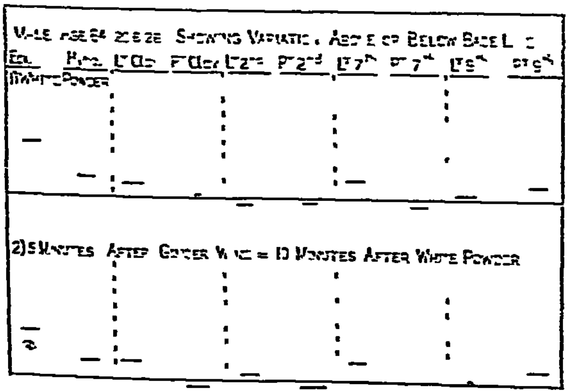
† The level of the left clavicle was observed in a hundred consecutive cases the individual being in the standard position The left clavicle was found to be higher than the right in 55 instances The second rib is similarly affected This elevation of the clavicle and upper ribs on the left side is due to the lack of relaxation of the anterior scalene muscle and upper intercostal muscles as compared with the muscles on the right No doubt this is a phenomenon which accompanies the visit to the consulting room, and is of a temporary nature

This reaction has also been tested experimentally by Lady Briscoe* on the cat the result being that in five cases there has been an elevation of the left side of the diaphragm and a diminution in its excursion In the sixth there was a general depression of both sides of the diaphragm, and a period in which considerable irregularity of movement of the two halves occurred. No changes were observed in the chest wall

From these investigations it is clear that a rapid distension of the stomach generally produces an effect on the diaphragm in both man and animals; this effect is most marked on the left side, tending to elevation and no increase of contraction In man this is associated with a certain amount of eversion of the lower ribs with or without elevation of the upper thorax, again more marked on the left side In the cat the chest wall is not affected. The object of accommodating the full stomach is attained by a different mechanism in man and beast How long in man this condition persists after the powder I am unable to state Some of the investigations have been prolonged for as much as half an hour, during which time a gradual diminution occurs in some instances, but is maintained in others In the cat the condition has been noted as persisting for an hour It may be contended that this alteration is a mechanical factor and is the direct result of distending the stomach, which thereby pushes up the diaphragm and pushes out the chest wall. As against this objection it may be mentioned that the abdomen was widely opened in the cat experiments, thus negativing the possibility of mechanical influences; and in the human cases, when investigated in the standard position, there was little or no contraction of the abdominal muscles To clear up this point, it was necessary to discover if other means would produce the same effect, such means not having the disadvantage of increasing, to any considerable extent the volume of the stomach. The introduction of cold liquids into the stomach frequently produces a sense of discomfort It was found an ounce of ice cold water in man,* or 10 c cm. in the case of a cat * produced the same phenomena, raising the level of the diaphragm in the cat, and everting the lower thorax in man, but to a degree less marked than the seidlitz powder; whereas, three ounces of water at room temperature produced in man only the mildest of changes from which a rapid recovery to the normal took place in the course of a few minutes The act of swallowing produces similar but transient, changes in the thorax. Dr. Livingstone could not detect any rise in the level of the diaphragm by X rays with small quantities of ice water

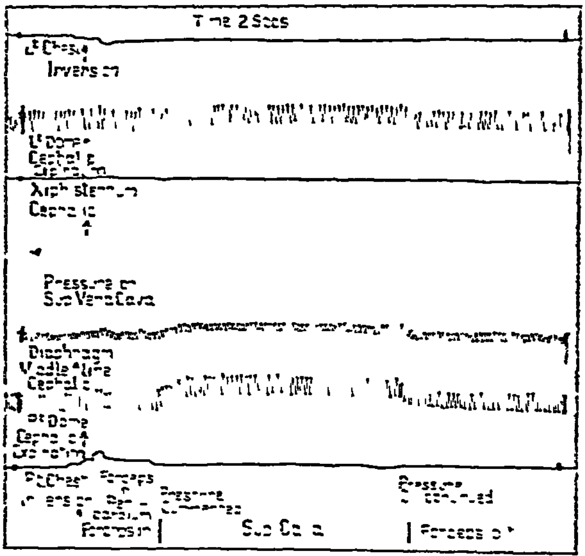
FIG 4.



Short lines indicate the relative elevations or depressions above or below base line.

I believe, therefore that we are justified in assuming that this change is caused by a reflex arising from the stomach, and owing to its prolonged operation is probably to be classified with the postural reflexes in general.

FIG. 5.



Elevation of level of diaphragm following obstruction to the superior vena cava.

Cartilages of Thorax.

It remained to investigate the mechanism by which the lower thorax is everted. A study of the thoracic bony cage will clarify the position*; the lower rib complex is formed by the sixth seventh, and eighth ribs—with sometimes, in addition, the fifth rib—between which the strong cartilaginous baulks are found. In a paper read before the Anatomical Society[20] I described the results of investigating these intercartilaginous joints, and came to the conclusion that their purpose was to assist eversion of the lower ribs These intercartilaginous joints are present on both right and left sides The numerical preponderance between the fifth and sixth cartilages on the right side was, I claimed, probably due to the presence of the liver, which was a constant factor preventing the lower ribs inverting to the full. The higher the fulcrum the greater the eversion of the lower thorax. The stomach, on the other hand, on the left side acted intermittently I concluded, contrary to the usual opinion, that these joints assisted in expansion of the lower thorax, and not in the elevation of the upper ribs I consider that the action we are now considering is a further proof of that conclusion, though at the time when that paper was written I had not begun this investigation on the stomach, and was not aware of this reaction.

This eversion is a movement, the hinge of which lies somewhere between the upper ribs, which are not protruded, and lower rib complex which is protruded. In trying to elucidate further the mechanism of this eversion of the lower ribs, the muscles of the thorax were investigated before and after a seidlitz powder in 10 cases. Eight of these were chosen at random, and two were out-patients complaining of pain under the heart; the first was a patient in whom the stomach was known to be ptosed but without marked symptoms, and the other case in which the viscera were transposed. (In the following analyses of these cases this latter one in respect of the right side acts as if it were on the left side, and is so considered.) The results of this investigation show that age is a prominent factor in the determination of the degree of this change. In the younger individuals muscular change is difficult to detect, and therefore must be slight. When detected it is of the same character as that in the older patients. In this category were four patients below the age of 24, in one of whom only a tonic condition developed in the fifth and sixth intercostal spaces on the left side.

The remaining six were over the age of 40. In four of these a tonic condition developed in one or more of the intercostal muscles of the fourth, fifth, or sixth space on the left side. Among these four are two cases who complained of pain after food ("under the heart"). The remaining two did not show this change, but on the other hand developed a tonic condition of the anterior scalene on the left side.

This result is interesting as confirming and giving a reason for the elevations as shown in the manometer readings of movements of parts of the chest as a result of rapid distension. As stated above, the duration of this action must have a bearing on this point, though I am not able to say how long this contraction persists, but I can state that at all events it persists for at least half an hour.

Where the thorax is already elevated as a result of an emotional state the addition of this gastric reflex produces a summation effect* and accordingly a greater strain falls on those muscles responsible for the sustained posture of eversion or elevation. Thus we see that a stimulus arising in the stomach causes by reflex action (*a*) an elevation relaxation in the respiratory position of the diaphragm, (*b*) an expansion of the chest, particularly of the left side, produced either by eversion of the lower ribs (in the young), or by elevation of the left side of the chest as a whole (in the old), though the actual respiratory movement of the parts is but little affected. The mechanical alteration in the chest is maintained by tonic action in muscles. This reflex I shall refer to later, as I believe it is the cause in many cases of the pain under the heart so frequently encountered.

Heart Reflex

The question naturally suggests itself, Are there other reflex phenomena in the body which produce a similar change? Dr. J. L. Livingstone and I have been investigating this point in connexion with the heart. We find that in rabbits in which the pericardium can be exposed by removing a part of the sternum, but without producing a pneumothorax so that artificial respiration is not required, manipulation of the heart produces constantly an elevation of the expiratory level of the diaphragm. The experiments have consisted in the temporary obstruction with forceps of the superior* and inferior* venæ cavæ and the systemic and pulmonary aortæ, and also in pressure on the root of the left lung by means of a bent probe. Obstruction to the outflow of blood through the aortæ produces little effect, obstruction to any of the other vessels constantly produces an elevation of the diaphragm and diminished contraction, although obstruction to the main veins of the neck does not have a similar effect. Irritation of the parietal pericardium has no such effect.

I have shown that in cats the reflex produced from the stomach affects the diaphragm only, but in man it produces an effect, not only on the diaphragm but on the thorax also. It does not seem to be unjustifiable to assume that another reflex producing identical effects in a pronograde animal will in an orthograde man having a highly developed thorax produce a similar and double effect on the diaphragm and thorax, and that as the result of cardiac conditions the thorax in man may be elevated. Such elevation of the diaphragm must be assumed to occur in acute carditis conditions so frequently accompanied by pericarditis, for in them deflation of the lower lobes is frequently found. It is common to find in severe pericarditis an epigastric recession, associated with a marked thoracic type of breathing and persistent tone in the scalenes. The former condition, due to excessive elevation of the thorax and intercostal action, is associated with a defective contraction of the diaphragm. The common factor in the deflation accompanying high paraplegia and unilateral phrenic paralysis, and in postural and postoperative deflation* of the lower lobes is a high diaphragm and thoracic elevation. The prolonged supine posture itself is normally accompanied by an elevation of the diaphragm* and increase of the transverse diameter of the thorax, especially of the lower part, indicating elevation of the thorax. These conditions are accompanied by the varying signs of consolidation. In the early stages crepitations clearing on a deep diaphragmatic breath are commonly to be detected. Such an elevation in cardiac cases in general would account for the crepitations which are heard at the bases of the lung, which are not accompanied by expectoration, and which clear up with forced and voluntary inspiration, and which may equally well be attributed to a condition of deflation of the posterior part of the lower lobes as to one of œdema.

So we see that pain and emotional states, whether temporary or of a more permanent nature, recognised as functional nervous disease, cause an alteration of breathing of the nature of a shift towards the thoracic type with raising of the expiratory level, while reflexes originating in certain viscera, the stomach and heart, result in a diminution of tone in the diaphragm associated with a persistence of tone in the muscles of the thorax. The persistence of tone on the part of the thoracic muscles concerned occurs at the expense of their resting period and must be regarded as an abnormal use or overuse.

Pleurisy.—Tonic contraction of muscles is well illustrated by the conditions which occur in pleurisy, the constant feature of which is the spasmodic condition of the intercostals in the area adjacent to the pleurisy.* In the case of a small area of acute pleurisy the easiest way to find that area over which frictions will be heard is to pass the finger down the intercostal spaces until a complaint is made of pain. At this point the muscle will be felt to be tonically contracted, and if a slight degree of pressure is maintained the pain is accentuated. No matter how the patient changes his posture the muscle still remains contracted. When measures are adopted to fix the rib the muscle relaxes, and the pain disappears in the course of a few minutes, although the frictions become more audible. In this affection the body adopts other means to assist intercostal action to limit movement. The posture assumed in bed will assist, generally lying on the affected side or inclining the spine so that the concavity is towards the affected side. In addition, however, other muscles are employed. In the case of the lower part of the chest, the lateral muscle before alluded to may become tonically contracted, as may also the respiratory part of the transversalis abdominis and the triangularis sterni.* The tonic condition of these three muscles, in the case of pleurisy affecting the lower part of the chest, is easily understood if looked at from the point of view of fixation of the ribs in the neighbourhood of the part affected. There is, still, a further method of securing rest adopted by the body. If a severe case of basal pleurisy is examined in the course of the first 36 hours* it will be found that one of the scalene muscles is in a degree of pronounced tonic contraction. In such a case all the intercostals on that side will be found to be in a condition of tonic contraction (and frequently there will be a general tenderness over the upper part of the chest). There is thus an effort to keep all the ribs on the affected side quiescent as well as to fix the chest at the upper and lower extremities. This scalene and upper intercostal tonic contraction accounts for the fact so frequently observed that the upper part of the affected chest may appear to be bigger than the normal side, at the same time it is inactive. In the course of a day or so the excessive tonic contraction of the scalenes and intercostal muscles tends to pass off. This progresses even further, inasmuch as the scalenes and upper intercostals tend to relax, and the contraction in inspiration is less than on the opposite side.* This gives rise to the flattened apex with diminished movement, the tonic condition of the intercostals in the lower part of the chest and of the abdominal muscles persists.

There is still another mechanism which is sometimes adopted in pleurisy, generally in young people, but is more constant in cases of pericarditis. This may be described as a "break" in the intercostal chain. The examination of such a case shows that the scalenes and upper intercostals on the left side are acting normally or are tonic, but that one intercostal, frequently the fourth or fifth, is completely inactive, the muscles of the lower part of the chest being in a general weak tonic condition or acting in expiration.* This relaxation mechanism adopted in the thorax may be carried to a further extreme condition, in which all the muscles acting on one side of the chest become entirely flaccid. I have met with this condition in two case of pneumonia late in the disease both of which terminated fatally. It is comparable to the lax abdomen in peritonitis and the prognosis is similar. In all these instances the contraction of muscles on the unaffected side goes on naturally.

In pleurisy we have yet another instance in which tonic contraction or lack of relaxation occurs. Observation shows that the tonic muscles are hard and taut, not relaxing and not shortening—i.e., not undergoing a movement contraction—clearly a change which deprives the muscle of its resting period.

Dyspnœa following Pleurisy

The pain of pleurisy usually does not last for more than a few days, the explanation given being that the irritated nerve-endings of the pleura are covered with fibrin and the mechanical element is removed. The extreme tonic condition of the muscles also diminishes, but in a mild degree persists for a considerable time, frequently for months, and leads to an abnormality of breathing which may produce symptoms. In pleurisy the diaphragm is known to be elevated and its contraction is diminished. Such elevation is of mild degree, and is not comparable to that which occurs with subdiaphragmatic lesions.[21] Applying the suggestion adduced in the former lecture, the explanation is that the intercostal spaces on the affected side are narrowed by muscular action, the ribs are approximated, and therefore the attachments of the diaphragm between the central tendon to the lateral chest wall are also approximated. Stretch is diminished, and so the usual stimulus produces a smaller contraction, or in some instances no response is forthcoming. This is confirmed by animal experiments.* If the condition of approximating the ribs is reproduced the contraction of the diaphragm on the same side is diminished. For reasons which I shall give, under treatment I do not think that there is any evidence of complete inhibition.

Two further points deserve attention, the first is that of the general changes which accompany old age. The second concerns the whole course of life in those who breathe in a manner which is a combination of the two extremes, and these, it should be remembered, constitute the majority of individuals. In old age because the muscles operate in the presence of defective elasticity of lung the cavity of the thorax becoming permanently enlarged, they work at a disadvantage. Which muscles will be affected depends on the type of breathing adopted, and the greater the tendency to thoracic breathing the greater will be the stress on the muscles expanding the thorax for in addition to the lung defect the costal cartilages are becoming less pliant. Two means are adopted to overcome this difficulty: (1) permanent elevation of the thorax, (2) increased expiratory muscle effort. The muscles affected will be seen by reference to my first lecture. If, however respiration is mainly diaphragmatic the difficulty is met by a lowering of the level of the diaphragm, with or without an elevation of the thorax. Thus we find in the senile diaphragmatic type either: (1) bent back and a prominent abdomen, or (2) elevated shoulders and a flat abdomen, and in the thoracic type (3) an over-distended and elevated thorax, the short-necked individual. In either of the last two a strain is thrown on the elevators of the chest. There is, however, a tendency in senescence for the thoracic type to develop a shift towards greater use of the diaphragm (type 1 above), and when this has been achieved, there is disappearance or diminution of symptoms arising from overuse of the muscles operating on the thoracic cage. The activity of these muscles will, however be renewed with dyspnœa, or under the conditions mentioned earlier in this lecture, or when calcification is taking place. It is interesting to note that calcification sets in early in life in the costal cartilages when the Wassermann reaction is positive and is, therefore an early change in syphilis. It may be well marked between 40 and 50 in this disease, whereas calcification in my series of 100 cases examined is not marked before the sixth decade is passed.

Antagonism of Muscles

The second condition may be termed antagonism. In quiet respiration, diaphragmatic and thoracic breathing are, as a rule, complementary and supplementary, and there is enough margin for comfortable respiration. When either is excessive interference with the efficiency of the other occurs. In excessive diaphragmatic breathing the lower ribs are held down by the lateral muscle approximated by the transversalis abdominis and triangularis sterni. The lower ribs are therefore, hindered in their thoracic function of being raised and everted. When thoracic respiration is excessive the diaphragm is splayed out, and its contraction is less effective and becomes still more inefficient when in addition the thorax is elevated.*[22]

A second instance of antagonism occurs when diaphragmatic and thoracic breathing are over-active simultaneously. With the intercostal muscles acting strongly in inspiration to elevate and evert the ribs, the triangularis sterni and transversalis abdominis are approximating the costal margins in the epigastrium, and the lateral muscle is depressing the lower ribs. There is, therefore, an excess of work thrown on to the intercostal muscles, and a strain which is aggravated with loss of elasticity in the ribs.

Analogous to the last described condition is the effect of contraction of the abdominal muscles which function as muscles of posture especially the rectus abdominis and that part of the external oblique attached to the sixth–ninth ribs. These muscles serve to connect the chest and pelvis, and when in contraction tend to oppose the elevation by the intercostal muscles of the ribs to which they are attached. In both these latter conditions the strain tends to fall on the points of junction between the upper and lower parts of the chest—i.e., in the region of the fifth and sixth ribs.*

To sum up this lecture, certain states of mind, certain somatic and visceral stimuli, senescence and respiratory stress produce changes in the mode of breathing. These changes entail undue activity on the part of certain muscles, which activity I believe to be generally of the nature of enhanced and persistent tonus. This occurs at the expense of the resting period of these muscles. If transient, it may not be of moment, but if persistent it will soon produce exhaustion. Activity in muscles calls for a vast increase in blood flow, and in the case of repeated movement (phasic) contractions this is provided by direct massage to the capillaries and veins. Persistent tonic contraction, so far from helping the circulation, actually impedes, so that exhaustion ensues leading to distress. Distress is appreciated by the patient as pain, and calls for investigation and treatment.

(The bibliography, to which references are given in this lecture, will appear with the third lecture.)

LIGHT TREATMENT IN SURGICAL TUBERCULOSIS *

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This paper is based on experience in sun and artificial light treatment in surgical tuberculosis at the Treloar Cripples' Hospitals at Alton and Hayling Island The remarks which follow should be taken as restricted to the general light treatment of surgical tuberculosis, and not necessarily as referring to other conditions to which phototherapy might be applied

It is important to inquire why the results of light treatment in surgical tuberculosis are so variable, why, in some instances so brilliant, and in others so disappointing If we could explain these differences we should be in a better position to conduct treatment with promise of success I, therefore, would place before you a theory which attempts to explain these variations For want of a better term I shall call it the " theory of varying stimuli and varying response " It may, at any rate, form a working hypothesis as a guide to treatment

Sunlight not a Specific Treatment

Contrary to what has been stated elsewhere, the sun will not cure all forms of surgical tuberculosis In my opinion it is in no sense a specific treatment At the best it is usually merely an aid to, and an accelerator of, cure, and only to a limited degree should it be used as a substitute for other means of treatment Its employment should supplement not supplant other means of cure Nevertheless, as an aid it is often of unique value Treatment by light may be general or local, or both, and the source of light may be solar, from artificial sources, or a combination of both By the majority general treatment by natural sunlight is considered the best form of light treatment available I hold the view that the best type of general light treatment to adopt will depend on the nature of response of the individual concerned

Here let us first briefly consider where sun treatment fails If, as alleged, the sun will cure all forms of surgical tuberculosis, why is it that it not only will not prevent infection, but also will not cure the disease in subjects living in the most sunny districts ? It is well known that tuberculosis will readily infect and rapidly slay unimmunised native races living under apparently the most ideal conditions from a heliotherapeutic standpoint Islanders residing near the equator, enjoying an equable climate, where the native may live nude all the year round, exposed to and enjoying sunlight of high actinic value, may rapidly die from the disease It may be argued that the hygienic conditions are bad, and that they have not acquired immunity But relatively immune resident Europeans becoming infected and who live hygienic lives will not necessarily or even probably be cured under these conditions, so apparently perfect for heliotherapy They will almost certainly do better if they return home I am not now alluding to localities such as central or southern India, where the excessive heat renders sun treatment of only very limited application Were light a specific treatment for tuberculosis, we might reasonably expect that the onset and progress of the disease might be prevented under suitable heliotherapeutic conditions This is contrary to fact

Consider the much-lauded Alpine climate Tuberculosis is endemic in Switzerland It has even been found desirable to establish a special sanatorium for university students Tuberculosis will arise and develop in sun-cure stations in the Alps More than that, it may even progress to a fatal termination in a person resident at such a station who has there acquired the disease and has had heliotherapeutic treatment *ab initio* Bernhard, though extolling the value of the high mountain sun, quotes Sauerbruch, who draws attention to (what Bernhard calls)—

> " The remarkable observation that swollen tuberculous glands in children who live in the high mountains will not heal up in spite of the sun and direct radiation, but rapidly improve at sea-level or when treated by brine baths in the plains "

Bernhard adds that he will not deny that such cases occur Such an admission is of extreme significance. Nevertheless, and rightly so, those who employ heliotherapy generally become enthusiastic as to its value

How may we explain this apparent paradox ? I submit that no reasonable explanation has yet been offered by the scientific investigation of demonstrable effects of ultra-violet or other forms of light Sonne's statement that the value of light treatment is dependent largely on its thermal effect is not adequate The function of ultra-violet light in raising hæmo-bactericidal power, though of some significance in certain cases, does not furnish the clue Indeed, in man, hæmo-bactericidal action on specific organisms may at times be so high that it cannot further be appreciably raised, and may even be lowered after exposure Moreover, this action is obtainable by other means, and is not peculiar to light therapy Consideration of alterations in the chemistry or composition of the blood and other changes which may follow irradiation of the skin does not very materially help us Indeed, no known sequel to successful irradiation, either from sunlight or artificial light, affords any completely satisfactory explanation How then can success or failure, following systematic light treatment in surgical tuberculosis, be reasonably explained ? I have already indicated some results of insolation These, combined or singly, doubtless have a bearing, but they do not tell the whole tale Let us consider the subject on broader lines and not permit our attention to be diverted by certain known sequelæ to insolation

Consider a patient receiving suitable insolation in this country Such treatment naturally implies treatment of the nude body in the open air under conditions which have seasonal, and indeed daily and hourly, variations The intensity and character of the solar radiation varies with the angle of incidence of the sun's rays, the density of the atmosphere through which they penetrate, the purity of the atmosphere, the presence in the air of moisture, dust, or smoke, the amount of sky shine and of reflected light, the intervention of passing clouds Moreover, latitude, locality, altitude, climate, temperature, direction and force of wind, proximity of sea, mountains, rivers, or lakes, forests, fields and even the nature of the soil, are all factors not to be neglected

Factors for Success in Heliotherapy.

At once we see that sun treatment, wherever undertaken, must be administered under continually changing conditions even when applied in one particular district The intensity and the character of the light available for therapeutic purposes are subject to perpetual change It is true that the extent of these variations differs much in different localities, but the one common unchanging factor is that of constantly changing conditions I would go further, and say that it is perhaps a most important factor Sun treatment for its general effects in surgical tuberculosis, is more effective in the constantly changing conditions—not merely solar—found in temperate climates than in the comparatively more stable conditions found in many tropical regions, where the intensity of the light may be much greater and not subject to such diversified actinic variation

Moreover there is great diversity of response in the individual being treated That is true, however, whether he receives sun or artificial light but in the latter case while individuals may vary, the light applied and the other factors are usually approximately constant

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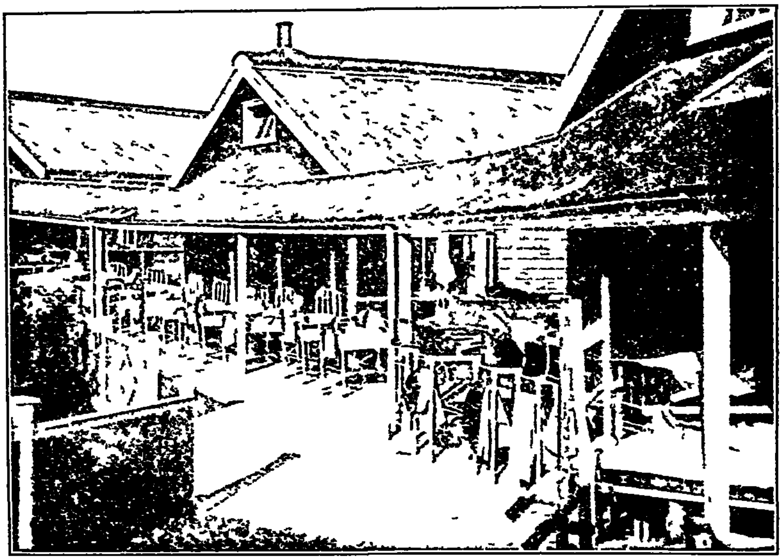
* Being the opening paper of a discussion before the Section of Electro therapeutics of the Royal Society of Medicine on Jan 21st 1927 Numerous lantern slides were shown in illustration

The more one considers the alleged superiority of sunlight over artificial light in the treatment of the subject attacked by surgical tuberculosis, the greater becomes the conviction that this superiority is due, not so much to the intensity of the light as to the variations in character and intensity of the light, assisted by changing external conditions not directly due to light In addition, in the case of a single individual responding satisfactorily to insolation, there is both a seasonal and a daily variation in response A lengthy clinical experience has taught me that I may reasonably expect the greatest seasonal response in the spring and early summer This is the period of greatest vegetative activity Vegetation dormant during the relatively dark winter has enjoyed a period of rest, and now eagerly responds to the light stimulus which it receives As the summer advances it is unable to respond so vigorously to the stimulus which, though present and perhaps more intense, is less effective Similarly with the patient His greatest power of response to the stimulus of light may be anticipated after that period when he has received the minimal stimulation And in practice we find the greatest progress made is in May and early June, not in July and August when the light intensity may be even greater, and when also the patient is able to tolerate longer exposure This is not a mere question of skin sensitivity, but of seasonal response

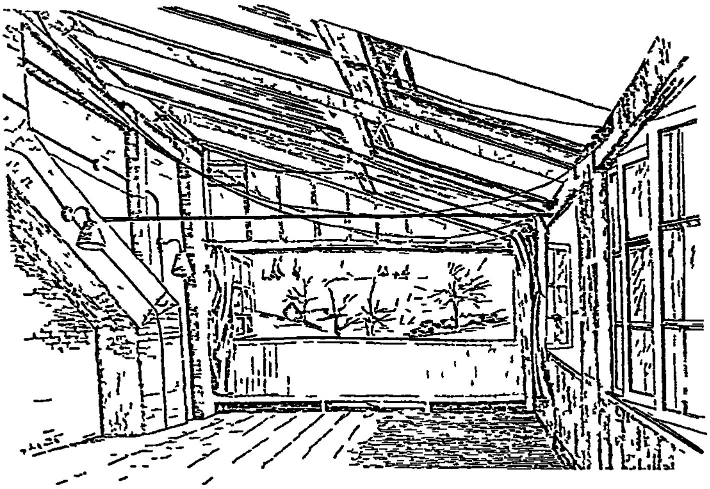
Realising this fact one is able to evoke increased response, if one deems it wise to do so, by changing the character and intensity of light and associated stimuli Thus, with patients responding well up to July but who are then commencing to flag and whose progress is less rapid, I find acceleration is again obtainable if I transfer such cases from Alton to Hayling A new type of stimulus produces a notable acceleration of improvement in the patient capable of making the desired response The basal metabolism is enormously increased by sea-bathing, spraying, paddling, cool sea breezes, and assistance given by the altered character of light The different intensity of the light will not alone explain the change, the combination of altered stimuli will Progress again becomes rapid provided stimulation is not pressed beyond the patient's capacity of response In other words, given a minimum light value, the benefits of insolation may be ascribed not so much to the intensity of the light as to the shock of varying stimuli (light and other) eliciting favourable responses The optimum light value will vary with individual patients

FIG 1.



Light and shade Balcony at Alton

FIG 2.



End of a sun balcony, showing the sliding roof of vitaglass, folding windows and flap ventilators at floor level

It is unnecessary for me to discuss the harmful effect of prolonged intense stimulation The patient is unable to make continuous response In the effort he becomes exhausted, irritable, nervous There is a practical significance in this observation. Continuous exposure to sunlight in the summer will not produce beneficial results as speedily as alternations of light and shade, of heat and cold, of humid and dry air Even the onset of a week or so of rainy or cloudy weather may be an advantage to the sun-cure in a hot summer Alpine writers would have us believe that Alpine sun in Alpine conditions is best of all I disagree It is only true for those patients in whom such stimuli will produce the optimum response Excellent results have been obtained in the Alps, but if these be analysed and compared with results obtained at home, we need not fear the comparison I am constantly seeing patients who have been wise enough to return from Alpine stations because progress has been arrested and in whom, in many cases, there are signs of exhaustion and retrogression of the disease Where the Alpine climate and conditions are really helpful is in the case with much recuperative power capable of responding to intense stimulation In these rapid and striking initial progress may be anticipated until power of response becomes exhausted The dramatic improvement obtained in such cases encourages many totally incapable of such improvement to essay the same cure I regard it as deplorable that so many patients are sent so far afield who would often do much better by remaining at home The progress which may be anticipated by treatment in the Alps does not so much depend on the extent, activity, or nature of the lesion, or the presence of complicating abscesses or sinuses as on the individual power of response The cachectic, non-pigmenting patient, of low resistance, even with the most trifling lesion will not do nearly as well under such conditions as if he were to remain at home The same is true for young children or elderly people, who rapidly become exhausted, and are unable to respond to the excessive stimulation they are called upon to receive (See Fig 1)

Sun Balconies for Use in the English Climate

In the winter, progress of the individual is often delayed This is not entirely due to the lack of sunshine available. In part it may be due to a natural slowing down of power of response. Resistance is lowered, Nature, to some extent, resting At the same time, the English patient is often not subjected to stimuli which have been available during the summer months These may, however, be supplied partly by natural and partly by artificial means. The following is a practical method which I have employed at the Morland Clinics, Alton I have there constructed balconies with sliding roofs of vitaglass This glass is said to transmit ultra-violet light of the wavelengths found in the solar spectrum Naturally, some especially of the shorter-waved rays will be absorbed and their intensity diminished. To ensure maximum transmission of light, the glass must be kept clean, a precaution frequently overlooked By the use of this glass considerable assistance is afforded to heliotherapy in this country when, owing to cold or rain, exposure to the naked sun or to sky shine is impracticable

As these balconies have proved of great practical help to me I here illustrate one (Fig 2), as I conceive their general adoption might be of substantial help to other clinicians That half of the roof adjacent to the wall is permanent and glazed with vitaglass The distal half consists of sliding panels of vitaglass suitably counterpoised and so constructed that they may readily be drawn up either entirely under the fixed roof or drawn down, or will remain stationary in any intermediate position at will Thus, if it rains these panels are lowered and patients may still be exposed nude to the sun or sky The visible and heat rays are transmitted and give ample illumination and usually sufficient warmth In fine weather the panels are raised and direct insolation proceeds The walls above the level of the beds are constructed of folding glass panels which may either be completely opened or completely closed, or occupy any intermediate position Ordinary glass is here all that is needed Whenever possible both the windows are folded open and the vitaglass panels drawn up The walls, six inches from the floor, are made of hinged flaps which open outwards so that air but no rain shall be admitted, these, in conjunction with suitable louvres in the roof, ensure perfect ventilation even during driving rain and when it is desirable to have the roof down and the folding windows closed By means of suitable blinds, shade may be obtained during hot summer days, and when light treatment is intermitted They also serve the purpose of excluding moonlight On another balcony, in a specially sunny situation, the fixed portion of the roof is constructed of Calorex, a glass which absorbs the greater part of the heat On this balcony the patient may be in bright direct sun or pleasant cool shade at will Artificial light is installed to supplement natural light when the latter is deficient Thus augmented light treatment with aerotherapy is available under natural conditions at all seasons of the year The principle of varying stimuli, to which I attach so great importance, is maintained, and the intensity and character of the light treatment may be varied at will The artificial light employed therapeutically is novel in character, but being still in the experimental stage, its description will be deferred for a later communication

Diurnal Variations in Individual Response

While there is a seasonal variation to the response of any given individual to light stimulation, there is also a diurnal variation. It has long been recognised that morning light is most therapeutically valuable. This, in my opinion, is not due solely or even chiefly to the nature of the light, but, because the light-shock evokes a greater response as immediately following the darkness necessarily antecedent, Rollier amongst others has emphasised the value of morning light

I have indicated that there are seasonal and diurnal variations in response to light stimuli in the same individual. Still more marked are the variations in response to such stimuli in different individuals I am not here concerned so much with special reactions, such as may be demonstrated in the treatment of rickets by light Rather am I attempting to visualise the total responses to exposure clinically noticeable in the subject of surgical tuberculosis These responses not only vary with each individual, but also to some extent with the type of the disease

If we expose half a dozen different patients to a similar source of radiation, sun or artificial light, or a combination of the two, for a shorter or longer period, the sum total of each of the individual results will be found to vary within wide limits, as evidenced both by the appearance of the patient and the rate of progress towards recovery Neither is it possible, by altering the time of exposure of these different patients, to attain the same improvement in all, or as will be shown by that patient making the greatest improvement under the optimum exposure The power of total response varies widely Scientific heliotherapeutists with physical leanings urge that we should know the intensity of the light we employ in the different regions of the spectrum Physiologists insist on the significance of the biological reactions to light, but there is no evidence that the sum of the biological responses evoked will be similar in each individual irradiated by identical light under precisely similar conditions Indeed, all clinical evidence with which I am acquainted in surgical tuberculosis would lead to a contrary view Viewed clinically, the different responses in different individuals seem almost infinitely variable That it is desirable to have exact knowledge of the nature of the light employed and of the various effects which it will produce in the organism is undoubted, but I am forced to the conclusion that a correct clinical estimate of the total effect produced is of greater value in treatment than exact information of certain reactions, though I emphasise the desirability of this information where procurable Heliotherapy in surgical tuberculosis is truly still more an art than an exact science.

The Chief Factor in Raising Basal Metabolism.

It has been repeatedly reiterated that sun-exposure results in increased metabolic activity and this increased metabolism has been attributed to sunlight Leonard Hill and Argyll-Campbell, working at Alton and Hayling Island, have shown conclusively that a constant rise in the basal metabolism occurs after a course of sun treatment, but that this rise is due to exposure of the nude skin to cold air, not to sunlight It occurs either in shade or sun and is, as might be expected, greater in winter than summer Alpine writers attribute this effect to sunlight That is incorrect

Basal metabolism is commonly higher in patients treated in the Alps than in lowland districts because they are more exposed to cold, but now the mechanism of its production is understood it may be equally *raised independent of locality* Moreover, there is an optimum limit to metabolic activity varying with the individual I am convinced that the high basal metabolism produced by exposure to excessive cold as described by Leonard Hill in some shivering Alpine children is not only not beneficial but actually harmful To maintain it is both cruel and undesirable A raised basal metabolism controlled within proper limits suited to individual requirements is advantageous It means the exhibition of energy production Heat is generated internally and lost from the body This necessitates the ingestion, digestion, and absorption of more food. It implies increased oxygenation, tissue change, and elimination of waste products. Associated with this is a speeding-up of repair in damaged tissues. But there is a limit beyond which this additional strain on the patient should not be attempted. The very young or old, the weak and cachectic, cannot successfully undertake such extra work. For these such rigorous treatment, inseparable from the winter cold even when associated with sunlight, is contraindicated. Especially is the strain harmful if protracted. If such a reaction is desired, it is better obtained as a series of progressively increasing shock stimuli than by continuous exposure, and in no way are these stimuli better obtained in suitable subjects than by graduated paddling, spraying, or immersion in sea-water. In those who are able to respond suitably the glow of reaction after a sea-bathe, the tingling of the skin, the sense of exhilaration and well-being, the increased appetite and power of assimilation of food, and the associated appearance of robust health, are evidences of the benefits of this stimulus. While the average basal metabolism of our resting, nude, recumbent patients at Alton is 40 per cent. above the normal, during a sea-bathe at Hayling it may be raised to 1000 per cent. above normal, and its value is reflected in the improvement observed in patients suitable for such treatment. The food cost per head of patients at Hayling receiving such treatment is nearly double that of similar patients at Alton. They need, consume, and utilise more food to do the necessary extra work they are called upon to perform, and the value of such work is reflected in the more rapid repair of healing lesions. But such additional work should be only demanded from patients capable of usefully making such effort, and we therefore only select such patients for this treatment as may be expected to respond suitably to the stimulus. The very young or old, the very weak or toxic and cachectic, in fact, the very ones whom we especially desire to aid are those incapable of responding to the strain such treatment necessitates. For these, the high Alps and the seaside are contraindicated. Much as we desire them to progress, we must of necessity be patient and content with the more gentle stimulus obtained inland.

It is noteworthy that though the incidence of tuberculosis is diminishing, tuberculosis in this cachectic type has been, during the last few years, increasingly evident in my experience. I attribute this to children born during the war who, owing to dietetic and other reasons during the pregnancy of their mothers, and during their own infancy are endowed with lower resistance to disease than the ordinary child. They have been more readily infected and possess less power to resist implanted tuberculosis. This type of patient is, as one would naturally expect, more common as you descend the social scale. In establishing our marine branch hospital at Hayling Island I had been largely influenced by the hope of especially aiding this type. In practice I have found that exactly the contrary meets their case. Gentle stimuli are all they, at first at any rate, can suitably respond to. Without, as far as I am aware, having appreciated these reasons for doing so, Reyn has endeavoured to provide the bathing stimulus in the artificial light treatment administered at the Finsen Institute, and after the general light bath invariably submits his patients to a cold or tepid douche. I do the same.

To return to light treatment proper, permit me to illustrate my thesis by perhaps an extreme example, none the less valuable because recorded by an astute lay observer. The Comte de Tressan thus describes a visit he paid to the celebrated author of "Gil Blas" who was then aged upwards of 80 years:—

> "I had been apprised not to visit M. le Sage till near the approach of noon, and the feelings of that old man showed me the effect which the state of the atmosphere produced in the melancholy days of bodily decline. M. le Sage awakened every morning so soon as the sun appeared some degrees above the horizon, became animated, acquired feeling and force in proportion as that planet approached the meridian, but as the sun began to decline, the sensibility of the old man, the light of his intellect, and the activity of his bodily organs began to diminish in proportion, and no sooner had the sun descended some degrees under the horizon than he sank into a lethargy from which it was difficult to rouse him." (M. le Sage died in the winter of 1746-47.)

In such a case a feeble light stimulus was sufficient to produce an optimum response. Had M. le Sage been suddenly exposed nude to the Alpine sun, under Alpine conditions, the shock would probably have been fatal, while to a lusty young infected adult with good resistance it would be the best possible stimulus to apply.

I have said enough to show that at this stage of our knowledge, exposures to light should be gauged by the estimated power of responses as judged by clinical experience. It may be said that this is empirical and unscientific, but I maintain it is correct. It is pursuing a false ideal to attempt to estimate individual requirements by mere physical measurements of light intensity or the observation of isolated physiological effects. I have seen both elderly and very ill people harmed irreparably by light treatment given by rule of thumb in doses applicable to healthy adults, but totally unsuited and much in excess of their especial needs. Clinical observation and experience are our best guides in the art of heliotherapy at this stage of our knowledge.

Pigmentation

I should here make brief reference to the rôle of pigmentation of the skin following sun treatment. Its value has been denied, but shrewd clinical observers like Rollier testify to its utility. With them I agree. It is valuable because it has a protective function. Longer exposure to light and cold can be tolerated and, if such exposure is correctly timed, is advantageous. Pigmentation is not necessarily synchronous with amelioration of disease, though it frequently is so. A pigmented patient may be so severely infected that nothing will save him, but that is not the fault of his pigment. Moreover, when a patient is well pigmented, erythema, one of our useful aids to dosage, is lost and an unskilled practitioner may make errors in exposure, but that is the fault of the physician. As a general rule, a well-pigmented subject can tolerate and benefit by longer exposures to light and cold air than a non-pigmenter, and the danger of error is diminished.

There are some good pigmenters who do not respond successfully to insolation in spite of every care in its administration. In those it is well to review our other methods of treatment and satisfy ourselves that nothing is amiss. In such patients light treatment should probably be more intermittent and the effect of increasingly strong shock exposures ascertained. Quite likely much stronger or weaker stimuli than have been given are needed. If these investigations are made carefully, the number of good pigmenters not responding properly will be found to be reduced when errors in one or other method of treatment are eliminated.

From a consideration of the above it may be inferred that general artificial light treatment for surgical tuberculosis owes much of its lack of success to the non-recognition of fundamental essentials. Constant intensity of light with regular exposures under the stable conditions found in a light department cannot be expected to produce optimum benefits. A certain minimum of light varying with the individual may be considered as essential for the conduct of light treatment, but after that, greater importance is attached to varying intensities and times of exposures, in this way, simulating more nearly light therapy under natural conditions.

Local light treatment of superficial lesions is governed by entirely different rules of application. It is administered to produce a direct reaction to a definite stimulus. As an example, lupus vulgaris may be instanced where local light is of value by its direct bactericidal action, its thermal effect, and the local favourable inflammatory response which suitable exposure elicits

In conclusion, it may be urged that the value of general light treatment in any particular district depends only partially on the intensity and nature of the sunlight available For some individuals very intense light is the reverse of beneficial, particularly in feeble cachectic patients with little power of response What is of greater importance is the application of varying light and other stimuli, graded and varied according to individual needs Patients able to respond well will do well under intense stimulation, whereas for weaker cachectic, and elderly patients great caution should be exercised and only slight stimulation is at first appropriate

If the inferences I have arrived at from a study of sun treatment are correct, it would appear that the search now being made for a suitable therapeutic artificial light of constant character and intensity, readily measurable by physical means or by individual biological responses, and constant in application, is illogical, and clinical evidence supports this view Rather should we adopt the method of varying stimuli graded to produce optimum responses in individuals who are themselves susceptible to infinite change in reacting power It is on these lines I am now directing experimental work

To one other response I should like to make passing mention All observers have been struck by the valuable psychological action of light as evidenced by the cheerfulness and vivacity of the suitably insolated subject Light is a tonic both to the mind and to the body and its effect in stimulating mental activity is one of the most interesting and not the least valuable phenomena associated with the complex and fascinating sequelæ following light therapy in surgical tuberculosis

GLYCOSURIA COMPLICATED BY GALL-STONES.

BY C D SHAPLAND, M B, B S LOND,
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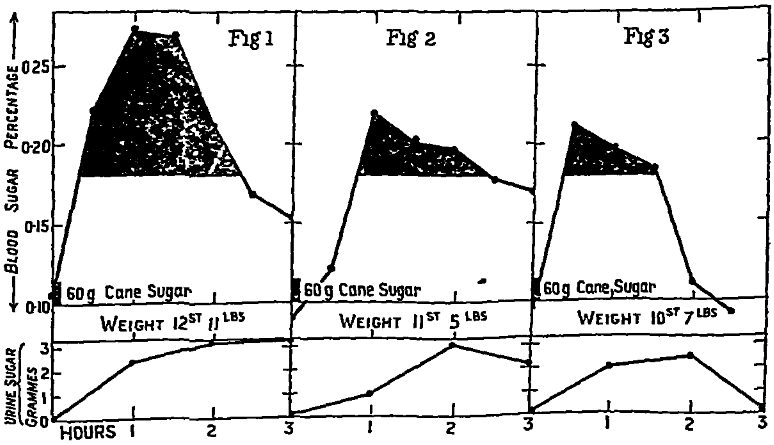
THE following case presents much that is of interest both from the theoretical and practical point of view, and is therefore thought to be worthy of publication

T J D, a storekeeper, aged 56, was admitted to Ruthin Castle in March, 1926, *complaining of fatigue*, the passage of large quantities of urine and glycosuria—the latter was first discovered eight years previously and had been present constantly ever since despite dietetic measures Six years ago he had an attack of acute abdominal pain diagnosed as gall-stone colic, there was a further attack two years ago, and one mild one since



On examination the patient, who was a flabby, obese subject, presented no physical signs of disease beyond a sluggish reflex in the right upper quadrant of the abdomen and slight tenderness over the gall-bladder Radiological examination of the gall-bladder region showed that this organ had a uniformly dense fundus with several opacities in the region of its neck

The usual routine employed at Ruthin Castle in the management of a diabetic patient was followed in this case For 48 hours he was kept on a *diet similar to that which he had been* taking before admission—viz, C 40, P 106, F 142 (calories 1920) The blood-sugar was estimated night and morning at 6 P M and at 8 15 A M, the urine collected for 24 hours and the quantity of sugar estimated Although the blood-sugar on this diet remained relatively low—0 14 per cent —the urine-sugar amounted to over 15 g in each collection Patient was therefore fasted for 24 hours, but, despite the fact that the blood-sugar fell to 0 09 per cent, the urine did not become sugar-free A "ladder" diet was then instituted, the carbohydrate being kept very low, and, as he was so much overweight for his age and height—namely, 2 st 9 lb —the diet was not raised above one of 1110 calories, C 8, P 80, F 81 On this diet, combined with massage and Vichy massage on alternate days, the patient steadily lost weight, but the urine failed to become sugar-free—from 2 to 7 g being lost daily in the 24 hours' collection The use of insulin was contra-indicated as the blood-sugar was now keeping at a normal level averaging about 0 12 per cent

A carbohydrate tolerance test done about this time (Fig 1) gave a typical diabetic type of curve, and an iodeikon test confirmed that the opacities in the gall-bladder region were actually in the gall-bladder

It seemed probable therefore, that the patient was *an atypical case of diabetes mellitus—atypical* in that with a normal blood-sugar there was a constant loss of sugar in the urine Renal glycosuria was ruled out by the carbohydrate tolerance test (Fig 1) which showed a true defect in dealing with excess of carbohydrate The association of chronic pancreatitis with infective conditions of the gall-bladder and its ducts has long been established, it seemed probable, therefore that the gall-bladder disease was the cause of, or at any rate was aggravating, the diabetic condition, and for this reason operation was advised.

Preparation of Patient —For several days before the operation patient was kept on a diet liberal in carbohydrates but restricted in fats (C 70, P 40, F 50, calories 920), in order to lessen the danger of acidosis from incomplete oxidation of the fats

Operation —This was performed under gas oxygen, and ether anæsthesia by Sir Berkeley Moynihan The liver was small and tucked away beneath the right costal margin, the gall-bladder was shrunken, a large stone was palpated at the fundus, and several small ones in its neck The pancreas felt hard and indurated Cholecystectomy was performed Patient stood the operation—which was technically a difficult one—well, and at no period of the operation gave cause for anxiety The gall-bladder, which was small, had a thick fibrous wall and contained a large stone of putty-like consistence at the fundus with three smaller stones of a similar nature in its neck A culture taken from the interior of the gall-bladder directly after operation gave no growth on blood-agar or on a MacConkey plate, and a culture from the interior of the large stone gave no growth in broth The blood-sugar before operation was 0 12 per cent, immediately after it had risen to 0 24 per cent Six units of insulin were therefore injected, and thereafter blood-sugar estimations were made hourly—after five hours *the blood-sugar had again fallen to 0 12 per cent*

Post-operative Treatment —The first 24 hours after operation patient was kept on rectal salines every four hours—each injection being of 10 oz and containing 10 per cent glucose with 1 drachm of bicarbonate of soda, in addition alkaline water was given as required by the mouth Blood-sugar figures on this day were 0 15 per cent and 0 21 per cent, urine-sugar 27 1 g, and acid bodies 4 3 g, 14 units of insulin were given in two doses of 6 and 8 units respectively On the second day 6 oz liquid feeds were given two-hourly, these were chosen from water, lemonade, milk, milk and water, and weak China tea Each feed contained 5 g of sugar so that a total of 60 g of sugar was taken in the 24 hours, in addition alkaline water was given as required, a total of 240 gr of bicarbonate of soda being taken in the 24 hours On this day blood sugar figures were 0 16 per cent. 0·19 per cent., urine-sugar 22 g., and acid bodies 1·5 g. Insulin was given in two doses of 6 units each.

During the following 15 days patient was kept on a diet relatively high in carbohydrate value but restricted in fats —viz. C 45 P 45, F. 40, calories 740 Twelve units of insulin were injected daily in two doses of 6 units: the blood-sugar varied during this period between 0·13 per cent. and 0·18 per cent. and the urine-sugar between 2 and 5 g. Acid bodies which on the day of operation amounted to 5 g. dropped to unestimable quantities on the fifth day, to traces only on the tenth day, and finally disappeared on the fourteenth day after operation. Two days after the last trace of acid bodies had disappeared from the urine, the carbohydrate in the diet was dropped from 45 to 10 g., and for the first time for eight years sugar disappeared from the urine. Patient was then fasted, insulin omitted and a "ladder" diet again instituted. The carbohydrate intake was raised to 30 g. without any return of glycosuria, but the fats were not pushed beyond 80 g. as he was still somewhat overweight. A carbohydrate tolerance test done at this time (seven weeks after operation) showed a considerable improvement in the form of the curve (Fig. 2)

The patient was discharged on a diet of C 36, P. 65, F. 83, calories 1195 blood-sugar figures on this diet varied between 0·10 and 0·12 per cent. and the urine kept sugar-free without having further recourse to insulin.

Discussion.

In the majority of cases of diabetes mellitus the renal threshold for sugar becomes raised: this case is unusual in that a true defect in carbohydrate storage has been associated with a very low renal threshold. In addition the case was complicated by a diseased gall-bladder and a marked degree of overweight. According to Joslin and other authorities it is becoming increasingly evident that gall-bladder disease bears a distinct relationship to the essential pathology of diabetes, it seemed rational, therefore, to advise operation in this case. The methods adopted to combat acidosis by giving a diet liberal in carbohydrates but restricted in fats before the operation, with plenty of fluid, sugar, and insulin with blood-sugar control for several days after operation have been described—the successful issue has been mentioned.

Eight months later this patient was free from all symptoms of the disease his fatigue had gone, the urine had remained sugar-free, and he felt strong and well On a diet of C. 40, P. 65 F. 85, calories 1220, the blood-sugar figures varied between 0·10 per cent. and 0·13 per cent., the urine was sugar-free, and a carbohydrate tolerance test gave—for his age—a normal type of curve (Fig 3). His weight had dropped to 10 st 7 lb—i e., about normal for his height and age Although the loss of the 2 st 4 lb. of overweight must materially have benefited his general metabolism, yet it seems probable that it was the removal of the diseased gall-bladder which was the deciding factor in alleviating the diabetic condition.

Clinical and Laboratory Notes.

TWO CASES OF ABDOMINAL ABSCESS

ILLUSTRATING THE VALUE OF ANTISEPTICS

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BUENOS AIRES

The following cases are recorded as a small tribute to the work of Lord Lister —

Case 1.—A girl, aged 19 was admitted to hospital suffering from appendicitis which had commenced acutely ten days before. The pulse-rate was 110 and the temperature 102° F.

Operation was performed immediately after admission. The skin was disinfected with warm formalin lotion (1 in 300) followed by alcohol sublimate solution (1 in 1000) When the abdomen was opened a large iliac pelvic abscess with an almost intolerable stench, had to be evacuated The appendix—which was disorganised and enshrouded in a peritoneal fossa—was clipped off after application of catgut ligature to its base. The huge cavity was then mopped as dry as possible and stuffed with large rolls of gauze wrung out in fresh iodoform emulsion. The upper segment of the "vertical" wound was closed by three interrupted through-and-through double silkworm-gut sutures Two similar sutures were introduced into the lower portion, their ends were knotted together, and they were left alongside gauze rolls as waiting sutures.

The gauze soaked in stinking pus was removed on the second morning and low level "peroxide carbolic" irrigation was done three times a day with "perchloride" fomentation dressing By the seventh day there was no further smell or discharge of pus although in the depth of the wound a necrotic looking cæcal wall was still in view On the eleventh day the wound had no pus in it and had bright red granulations around the parietal opening the gut was still of a dirty white colour but was dry The closed segment had united by first intention and the three silkworm-gut sutures were absolutely clean, without even a drop of serum or sign of irritation around the stitch holes. The two waiting sutures were in a similar state

On the twenty-first day, the wound having granulated sufficiently (without intestinal perforation), the sister partially closed the open crater with the two waiting sutures which had preserved their aseptic condition. The three upper sutures had been removed on the sixteenth day.

From the seventh day the five silkworm-gut (double) sutures had remained innocuous in an apparently normal white skin which had previously been swamped in mephitic pus, but which, for 20 days afterwards had been frequently saturated with warm peroxide solution (1 in 17) and carbolic (1 in 70), and dressed with lint wrung out in hot corrosive sublimate solution (1 in 3000)

Case 2 —At the same time there was in hospital another case giving striking proof of the value of antiseptics A young man was operated on for subacute appendicitis, and a small abscess was found presenting on the under surface of liver The lower segment of the parietal wound was closed by interrupted through-and-through silkworm-gut: the hepatic cavity, having been cleaned out, was first week drained by large rubber tubes At operation two silkworm-gut waiting sutures had been introduced in upper segment.

On the eighth morning as a drainage tunnel appeared well-established the tubes were omitted, and treatment with peroxide carbolic and with sublimate fomentations was begun. On the tenth day the purulent discharge had ceased; on the fourteenth the three lower sutures were removed from an apparently united aseptic wound. The hepatic segment was gradually closing with bright red granulations but the wound was not as yet suitable (too oval) for closure by waiting sutures On the thirty-second day after operation the silkworm-gut sutures were still in perfectly aseptic condition and after so long an exposure were still placidly waiting to be tied.

A CASE OF
IODISM IN WHICH ŒDEMA GLOTTIDIS NECESSITATED TRACHEOTOMY.

By N. W. Snell, M.D., M.R.C.P. Lond.,
and
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Asphyxia from potassium iodide poisoning seems sufficiently rare to warrant the publication of a case.

M. R., a stout and lethargic widow aged 62, had suffered intermittently from varicose ulcers of both legs since 1913, and was admitted to St. Marylebone Hospital on August 28th, 1926 Her Wassermann reaction was negative, She had marked pyorrhœa alveolaris and was subject, in winter to exacerbations of chronic bronchitis; but she was otherwise a healthy woman. On Sept. 14th potassium iodide was exhibited.

That night, after 15 gr of the drug had been taken, she complained of discomfort and was examined upon the night round. She had swelling of both submaxillary glands, more marked on the right side. Next morning (Sept. 15th), after a total of 25 gr potassium iodide, she complained of a "cold." The submaxillary swellings were larger, the conjunctivæ suffused, and the pharyngeal mucous membrane was œdematous. The iodide was stopped (N. W. S.) and a tentative diagnosis of idiosyncrasy to iodides was made.

At 4 30 P M she was reported by the nurse in charge as "very dyspnœic with some obstruction to respiration" On examination (L H S) the throat was found to be more swollen, and a laryngoscopy showed œdema glottidis Breathing temporarily improved , but tracheotomy instruments were prepared, the position of the cricoid was marked, and 16,000 units of diphtheritic antitoxin were injected subcutaneously, the possibility of laryngeal diphtheria being in mind In fact, however, the swab then sent for examination was negative

At 8 P M on the same day severe dyspnœa recurred and a rapid tracheotomy had to be performed (L H S) with the patient in extremis and unconscious By this time the neck was so swollen that an ordinary silver tracheotomy tube was not long enough, and the wound had to be held open by the thumbs while the patient recovered breathing Eventually a longer rubber tracheotomy tube was inserted

In three days all the swelling had subsided The tracheotomy wound rapidly healed and the patient was discharged a fit woman on Sept 22nd, the ulcerated legs also having healed We now feel a certain trepidation when prescribing potassium iodide

A classical description of similar symptoms was that of H Huchard and P le Gendre[1] in their paper, "Crise laryngee (Œdème arytenoidien avec spasme glottique) provoquee chez un tabetique par l'emploi de l'iodure de potassium et ayant necessité la tracheotomie "

We wish to thank Mr Basil Hood, our medical superintendent, for permission to publish this case

Medical Societies.

BRITISH MEDICAL ASSOCIATION CONFERENCE.

A CONFERENCE was held in the Council Room of the British Medical Association House on Monday, April 4th, to discuss

Research and Animal Experimentation

Mr R G **Hogarth**, President of the Association, took the chair and the following motions were discussed by representatives of medical and scientific bodies present —

(1) That this Conference, believing that any withdrawal or curtailment of the powers at present granted under license and inspection, will hinder medical research to the detriment of the health and well-being of the community, wishes to enter a strong protest against any Bill which has for its object further restrictions upon experimental work on dogs or other animals

(2) That this Conference is of opinion that the existing law should be altered so as to permit, under proper provision for the prevention of pain and for efficient inspection and control, the use, for purposes of research, of some of the numerous stray and unowned dogs now taken up by the police and condemned to the lethal chamber, thus ensuring conditions which are essential to progress in physiological knowledge and to the application of this knowledge to the practice of medicine

(3) That *copies of the above resolutions* should be sent to the Prime Minister and to the Home Secretary, together with a note of the names of those present at the Conference and of the bodies they severally represent

The **Chairman** opened the proceedings by reminding the delegates that the agitation which they had met together to combat was not new, but was kept alive year by year by bequests to various societies for the special protection of dogs It was not distinguished by any scrupulous accuracy, and he doubted whether five per cent of those who conducted its emotional propaganda were aware of the rigid restrictions under which animal experimentation was carried on, or of the beneficial results which had accrued from it He did not challenge their sympathy for the sufferings of animals, but their inability to appreciate the deeper issues involved The overwhelming weight of scientific opinion laid stress on the unique experimental value of the dog because of the similarity of its physiological processes to those of man He asked the meeting to say in effect to Parliament "Trust our scientists, and trust them fully" Less harm would come to dogs from them than from the short-sighted advocates of the Bill

The Threat to Research in General

Lord **Dawson** remarked that although the current agitation was ostensibly directed towards excluding dogs from experimentation, the principle of experiment as a whole was involved For his part he was delighted ; it was much better to face the question outright than to allow their opponents to attack it in detail If it were wrong to use dogs it was wrong to use other animals It was unlikely that doctors who were trained to care for human suffering would be drawn into cruel and inconsiderate methods It could therefore be assumed that there was no cruelty of intention The fundamental point at issue was whether men were ethically justified in using animals for any of their own purposes , no one could pretend that the preparation of the turkey for the anti-vivisectionists' Christmas table was a pleasant process, or that horses really liked drawing heavy loads, or that cattle enjoyed being castrated Surely the answer was that special use of animals was justified provided that the end in view was sufficiently beneficial to mankind and that the animal suffered no undue discomfort It was often forgotten that animals had none of the terrors of anticipation and other mental agitations that often far outweighed human physical suffering The medical profession, with full sense of responsibility, assured the public that without experimentation it could not carry on If the public said that experimentation was not justified, well and good , he would like to see the question brought to a head If they took that responsibility, all the implications that followed were theirs He was satisfied that once the public understood what those implications were, it would not be long before they withdrew their support from the opponents of experimentation Was the public willing to take the responsibility of saying that the use of insulin was not justifiable , if so, the medical profession would like it stated in plain language. It must be understood that the work of research into the causes and treatment of such conditions as jaundice, gall-stones, typhoid, and lock-jaw, and into the action of such drugs as pituitary extract must cease if such a Bill became law Were the actions of new drugs to be tested on the wives and daughters of the public, he asked, or were no new drugs whatever to be used ? A dog was never used without good reason, but whether a dog was necessary or not could be settled by nobody but the experts concerned The profession appealed confidently to the public on the question as a whole, not on this mere subterfuge, and asked that their colleagues in research should be left undisturbed by this mischievous and harrassing interference

Dogs and the Surgeon

Sir **Holburt Waring** related his experiences in research work and in the use of animals, as an alternative to patients, for acquiring surgical technique. From a technical point of view a large dog was far and away the best If the public desired that progress should be made by surgeons, animals must be used, and in his opinion the amount of suffering thus entailed was much less than in experimenting upon patients He considered that surgeons, as a body, had a right to be allowed to try to make advances in their own sphere He had had personal experience of the effectiveness with which the legal restrictions on experimentation were enforced

Dr. G M **Robertson** spoke of the amount of suffering, of mind as well as body, that had been saved to the human race by the sacrifice, small in proportion, of a few dogs He quoted illustrative expressions of opinion from those people who, contrary to most normal men and women, regarded a dog as of greater value than a human being, and asked if legislation on so important a subject was to conform to the ideas of such people To those who knew the facts it was inconceivable that anyone could approve of the Bill, which was based on a failure of imagination. He then spoke of the importance of experimentation on dogs and cats to cerebral pathology, and quoted from O. Henry: "I am a Kentuckian and I have seen a great deal of both men and animals, and I never yet saw a man who was over-fond of horses and dogs but what was cruel to women" The public entrusted their lives to the profession, and it did not seem too much to expect that they would not cause unnecessary suffering to another of God's creatures

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[1] Bull et Mém de la Soc Méd des Hôp de Paris, 1885

Mischievous Methods of Attack

Sir Thomas Lewis said that the science and practice of medicine had been built upon the examination of living people, the dissection of dead bodies, and experiments on living animals, and all our knowledge of human disease was derived from these sources Had any one of them been closed, medicine would have failed to emerge from the Dark Ages. He suggested that any one of his hearers should sit down and write a reasoned statement on the process and control of the circulation, or of the nervous system, without using any fact or inference derived from experiments on living animals Only then would he fully understand the fundamental part these experiments had played He illustrated this point from the cardiovascular system The supporters of the Bill displayed astonishing ignorance of the conditions under which animal experimentation was carried on. No dog could be kept in serious pain without the fact becoming immediately known, and there was no licensed building in the land in which such conduct would be tolerated. The recent petition of the National Canine Defence League proved by its inaccurate statements that its signatories were the victims of a mischievous campaign and unfitted to influence the decisions of Parliament. The leaders of the antivivisectionists in this country were unscrupulous or culpably negligent in presenting grossly inaccurate evidence and in perverting the meaning of plain words The campaign satisfied a morbid craving for the horrible and gruesome and the "tortures" of animals which brought to many right-minded people much needless suffering existed only in the imagination. Those engaged in attacking animal experiment were engaged in an attack on the progress of medicine, those who lent their support were upholding a campaign against the cure and alleviation of human suffering.

Lieut Colonel J. W. Brittlebank said that as a veterinarian he saw a good deal of the societies responsible for this emotional propaganda, and were it merely emotional, and not unprincipled, would not object to it, but actually there were no lengths to which these propagandists would not go He thought there could be no other civilised land where men who devoted themselves to the mitigation of suffering in man and animals were so pilloried as in this country He was there to offer the utmost support of the veterinary surgeons He emphasised the difference between the mental attitude of man and animals, and referred to the research on distemper, asking whether that was to be stopped.

The General Practitioner.

Dr H B Brackenbury said that an accusation of cruelty or callousness, or even of a lack of sympathy, was one which, if closely examined by any responsible person in the country, would be at once repudiated General practitioners associated themselves with those who knew a great deal more than they did about the actual experiments and recognised their value in everyday practice He mentioned particularly the testing of drugs and the treatment of cardiovascular and digestive disorders He failed to see how anyone could consistently support this Bill unless prepared to refuse the chief medical aids which his doctor could give him Much was heard nowadays of the importance of research work by general practitioners but this research could not begin on human beings: it must receive its impetus from animal experiments If the medical profession were going to create such a public opinion as would prevent the annual recurrence of such absurdities as this Bill, it was the general practitioners who must play the greatest part. This was no easy task, and it required a good deal of courage for doctors to tackle their patients on the question He was certain, however, that there was a very large body of people sincerely anxious for and willing to accept guidance, and he urged practitioners to throw themselves into the campaign, and to make opportunities where none were offered.

General Discussion

Lord Lamington (Research Defence Society) spoke of the persistence of certain highly-placed supporters of the Bill and the necessity for energetic countermeasures

Mr. E W Moss Blundell (*Field* Distemper Fund) pointed out that the work on distemper was for dogs but would probably lead to the relief of human diseases. The work was progressing admirably and receiving enthusiastic support from all over the world Its stoppage by legislation would be a calamity and a bitter disappointment to dog-lovers everywhere.

Lieut-Colonel F. E Fremantle said that the real difficulty to be countered was the feelings of dog-lovers who were blinded by their love, and were impervious to argument. A statement as to how much animals in general and dogs in particular had benefited by experiments would be very useful in dealing with these people.

Prof F. T. G Hobday described his experiments on the use of chloroform for veterinary operations and related the horrors of the pre-anæsthetic days. For these experiments he had had to obtain the most "brutal" licence and was now branded as a vivisector, but truth must prevail

LIVERPOOL MEDICAL INSTITUTION.

A meeting of this Institution was held on March 17th, when Dr. R. W. MacKenna read a paper on

Psoriasis.

It was a reproach to the profession, he said, that though psoriasis was one of the most ancient of recognised diseases, there was as yet no certain means of curing it Its cause was still unknown, though undoubtedly a definite familial tendency was traceable in about 30 per cent of cases The determining cause of the first outbreak was usually some slight trauma, but once a person had had an attack he was likely to suffer from recurrences all his life. The psoriasis papule, the initial lesion, was a characteristic pathological entity, and it should be possible to diagnose the disease from a single papule The appearances produced by systematic curetting (grattage) were very characteristic, and Dr MacKenna demonstrated by photographs of sections the anatomical conditions on which they depended He also gave an account of experimental observations, made with the help of Dr Elizabeth Hunt, in his clinic at the Royal Infirmary. No new and certain method of curing the disease had, however, been discovered

Dr R. E Roberts and Mr. St George Wilson contributed a note dealing with

The Treatment of Menorrhagia by X Rays.

Thirty-four cases had been treated, and it had been found that the technique adopted should vary according to the patient's age. In older women the object was to bring about an artificial menopause. whilst in younger ones—those under the age of 40—the aim was to avoid, if possible, any interference with fertility except as a last resort A dose that would cause sterility in a patient over 40 years of age would not have the same effect in a younger woman, which meant that there was a bigger margin for submaximal dosage in younger subjects If, however, it was finally decided to sterilise such patients it would take longer to bring about the desired result In older women a permanent amenorrhœa had been in every case successfully produced by X rays. In the younger group an amelioration of symptoms was brought about in most of the cases by submaximal dosage, and it was rarely necessary to proceed to complete sterilisation Most of the cases had been treated unsuccessfully by other means before X rays had been tried Dr Roberts and Mr Wilson also referred to irradiation of the spleen as an adjunct to the treatment of excessive bleeding, and to irradiation of the ovaries by very small stimulating doses in the treatment of primary amenorrhœa Too few cases of amenorrhœa had been treated in this way to allow of any conclusions about its value

Reviews and Notices of Books.

LISTER AS I KNEW HIM.

By JOHN RUDD LEESON M D , C M London
Baillière, Tindall and Cox 1927 Pp 212
8s 6d

THE work of great minds endures long after the earthly temples of the body have dissolved in dust, of that work later generations will have cognisance but the personal characteristics and mode of life of the worker will often be hidden, although of absorbing interest to those who have not had the opportunity or the privilege of personal relations with him alive Lister's labours by which he converted operative surgery from what was—before his teaching began to take effect—in many cases, and necessarily, a death-dealing art, to one which is in verity a life-giving one, are known to all men to the public now as well as to our profession, but the personality of the man himself as he appeared to his contemporaries and to those who had the honour of working with him is still largely concealed despite Sir Rickman Godlee's biography and the published estimates of a group of early and devoted followers Hence the appearance of Dr Leeson's book in this centenary year of Lister's birth is timely

The book is very simply written by a faithful disciple who had and has as any disciple of Lister must have, a whole-hearted reverence and love for his teacher Dr Leeson commenced medical study at St Thomas's Hospital which was removed from the Borough to its present site near Westminster Bridge in October, 1871 The site was new, as airy a one as could be found, and there was as much chance of sunlight as is possible in London, the building was new, the fittings were new, and the nurses were of the new school of Florence Nightingale Never did an institution start less weighed down by evil heritage Sir John Simon, who had been assistant surgeon at King's College Hospital (where Lister was afterwards to preach to audiences mostly apathetic), was one of the surgeons, and was also the first medical officer of health for the City of London and medical officer under the Public Health Act Everything to all appearance that could make for the successful healing of wounds was present at St Thomas's Hospital by Westminster Bridge “And yet” Dr Leeson says, “as far as surgery was concerned pyæmia, septicæmia, and erysipelas were as rife as ever” And the student of those days knew very much about the working of the wards, though the medical curriculum occupied only two and a half years when Dr Leeson joined his medical school, of which term the first year was taken up also with dissecting and attending lectures The spare time was devoted to walking the hospital Leeson on arriving at the latter portion of this time, which to-day, seems so terribly inadequate, asked one of the staff, the great Charles Murchison, how he had best spend this eighteen months and Murchison then gave this remarkable answer ‘If I were you, Mr Leeson I should not spend the whole of my time at St Thomas's, I should go to Edinburgh and follow the practice of Professor Lister, I believe there is a great future before his work and that it is well worth your while to study it” And it may be noted that shortly before this advice was given a series of papers was running in THE LANCET by Murchison, in juxtaposition to Lister's earliest reports of his results

Accordingly, armed with letters of introduction from Murchison to Lister and Grainger Stewart, the young student arrived in Edinburgh in the summer of 1873 and was admitted to Lister's wards. They were dark, gloomy, and sunless, but the patients were cheery and comfortable, there was little pus, no pyæmia and no putrid wounds, and there was—Mr Lister Consider what an impression the place, the work, the results of the work, and the personality of him to whom these results were due must have made upon a young and receptive mind fresh from the horrors of the ordinary surgery of those days Dr Leeson manages to make us realise something of his feelings He became dresser, then surgical clerk, and he describes with vivid touches Lister and his methods, his passion for accuracy and attention to detail, his never-ceasing personal interest in each patient, his kindliness, his courtesy, his modesty, as when he would say, “Never be afraid of confessing your mistakes, it is cowardly not to do so, and it may prevent others from falling into like error” In 1877, when Lister migrated to London as professor of surgery at King's College in succession to Sir William Ferguson, he offered to take his old clerk with him, but circumstances forbade the acceptance of the offer Besides the personal recollections of Lister, Dr Leeson supplies an excellent résumé of the history of antiseptics, the development of antiseptic dressings, and a description of an operation by Lister in the early days of the system when the spray was still in use

The book is well done Not only all medical men of the younger generation should read it but lay folk as well

DIABETES MELLITUS

The Pathology and Treatment of Diabetes Mellitus.
Second edition By GEORGE GRAHAM, M D ,
F R C P , Assistant Physician, St Bartholomew's
Hospital London Humphrey Milford Oxford
Medical Publications 1926 Pp 230 8s 6d

THE appearance of the second edition of this work will be welcomed by research workers and practitioners alike It is not only a concise enunciation of the present state of knowledge of carbohydrate metabolism, but this edition also contains practical information, invaluable to those who watch over the progress of diabetics in their daily lives, in a newly added chapter entitled Details of Treatment with Insulin The first three chapters of the book, which deal with the distribution, storage and physiological regulation of sugar in the body, have been brought up to date, it is important to note that insulin is only one, though the most important, of the substances produced in the body contributing to the regulation of the blood-sugar, the part played by adrenalin, thyroxin, and pituitrin is probably considerable A new chapter follows in which the history of the discovery of insulin is summarised and its properties and mode of action are set out, as far as they are at present understood So far as the muscles are concerned, insulin, it is suggested, converts glucose into a new kind of glucose (neo-glucose) but stores the dextrose as glycogen, while the glycogen in the liver bears no direct relation to insulin

With regard to treatment, Dr Graham is strongly in favour of the ladder diet as opposed to the maintenance diet extensively used in the U S A and Canada, which is, however, detailed in a special appendix His reasons for this preference are (1) the more rapid relief of symptoms, (2) the possibility of forming, under conditions of temporary fasting, a more accurate estimate of the severity of an attack, and (3) the valuable psychological effect on the patient who learns early to understand the principles of the treatment of his complaint The sense of well-being in patients treated with insulin is emphasised as more than compensating for the minor inconvenience of a daily injection Most diabetic patients below the age of 40 require insulin, and Dr Graham finds that patients between the ages of 40 and 60 are able to lead more active lives on a small daily injection For young children he finds that a standard of from 2 to 4 g of protein per kilo is necessary to maintain growth and development, and if this ration cannot be taken without the help of insulin the drug must be given Symptoms of over-dosage of insulin are well described and their treatment by sugar, adrenalin and pituitrin is set forth Finally, methods of effecting exchanges in the diet, which otherwise tends to become too monotonous, are detailed, a special appendix on food values being included at the end of the book Diabetic foods are prohibited unless their percentage composition of fat, carbohydrate, and protein is clearly stated In the last chapter the causation and treatment of diabetic coma are dealt with Dr Graham considers it safer to give 2 oz of dextrose together with the insulin to ensure a sufficiency of sugar in the body

The book is an admirable summary of the theory and practice of the most modern methods of treating diabetics.

CLINICAL PEDIATRICS.

By JOHN LOVETT MORSE A.M M D Professor of Pediatrics, Emeritus, Harvard Medical School London and Philadelphia · W B Saunders Co 1926 Pp 848. 42s.

Prof Morse states in the preface to this book that, while he hopes that it may be interesting to students and practitioners it was written primarily for his own amusement The author finds much to entertain him in many of the current methods of treatment and the theories on which they depend, and he brings to bear upon them a wealth of shrewd criticism and no little humour. He holds strong opinions and presents them dogmatically, which the student will appreciate One of the most interesting and original parts of the book is that devoted to dyspepsias and alimentary toxæmias, the account given both of the significance of symptoms and of the indications of treatment will be really helpful to the practitioner Prof Morse is insistent in warning the reader against the common tendency to assume that acidosis is the cause of all conditions associated with acetonuria Short, readable accounts are given of the fevers, and there is an admirable chapter on tuberculosis The chapters on infant feeding will disappoint those who desire to simplify the subject since the use of somewhat complicated milk formulæ for individual infants is expressly advocated In view of the great experience of the author and the attractive style in which the work is written it is likely to find a place among standard text-books on the subject

PSYCHO-ANALYSIS

Further Contributions to the Theory and Technique of Psycho-analysis By SANDOR FERENCZI M D. Compiled by JOHN RICKMAN M.A M D Authorised translation from the German by JANE ISABEL SUTTIE M.A., M B., Ch B, and others London Hogarth Press 1927 Pp 473 28s

THE bibliography of Dr Ferenczi s writings printed as an appendix to this volume shows the gradual transference of his interest from organic neurology to psycho-analysis which he has practised for eighteen years; since he holds a prominent position among psycho-analysts this collection of papers may be taken to represent authoritative views Most of them are written for those engaged in the speciality, and the section on technique discusses methods of "active therapy" designed to stimulate patients in whom free association has reached a dead end These consist chiefly of depriving the patient of some pleasurable activity the most striking being the setting of a limit to the analysis and they seem to have roused the opposition of his more conservative colleagues Apart from this internal controversy a few polemical essays are to be found in the section on nosology Analytical findings are given in two cases showing hysterical anæsthesia in one the loss of sensation being connected with the memory of a trauma whilst in the other, it is a true stigma representing unconscious phantasies. We may accept these statements and yet question the entire repudiation of Babinski's explanation that hysterical anæsthesia is suggested by the doctor This explanation was the result of clinical experiments that have been confirmed by other observers and Ferenczi s dismissal of it is as unsatisfying as Babinski's theory that hysteria is nothing but suggestion The chapters on the general theory of the neuroses are suitable for the ordinary medical reader, but some of the later portions will be unintelligible to him Dr Rickman in an introductory note praises the imaginative quality of the author, and compares the understanding of psycho-analytical literature with that of mathematical science; according to him understanding in each case is a matter of unconscious mental adjustments, the adjustment in mathematical science being almost entirely intellectual and in psycho-analysis almost entirely emotional. The acceptance or rejection of psycho-analytical observations is often emotionally determined, but some chapters in this book—that, for example, on the acceptance of unpleasant ideas—demand serious intellectual effort There seems no link between the theories enunciated in that chapter and whatever material they are presumably based upon Easier and of more practical use are the chapters on medical jurisprudence and criminology, though either emotion or intellect urges the rejection of the view that the Œdipus myth found alike in savage totemism and the unconscious of the civilised, represents an actual tragedy in the history of mankind. The book is decidedly uneven but will be welcome to those who wish to enlarge a previous knowledge of the subject

The Ego and the Id. By SIGM. FREUD, M D, LL D Authorised translation by JOAN RIVIERE London Hogarth Press 1927 Pp 88. 6s

THERE have been many systems of psychology which sum up if they do not explain, general principles of human behaviour Freud having explored the repressed material of the unconscious, here attempts to set up his own system covering mental activity in general Nietzche used the term *das Es* (the id) for whatever in our nature is impersonal; Groddeck, following him used it for the unknown and uncontrollable forces by which we are "lived"; Freud looks upon the mind of the individual as an unknown and unconscious id upon whose surface rests the ego, developed from it by the direct influence of the external world But there are qualities in human nature—the higher, moral or spiritual qualities—which as Freud says, psycho-analysis has been reproached for ignoring These he ascribes to an ego-ideal or super-ego, formed during the phase when the Œdipus complex is mastered and permanent expression is given to the influence of the parents: the parents are perceived as the obstacle to the realisation of the same Œdipus wishes and the child's ego erects the same obstacle within itself, thus establishing the domination of the super-ego in the form of conscience or the categorical imperative Since the ideal is set up in opposition to the unconscious instinctual trends its connexion with them leads to the super-ego itself being to a great extent unconscious and inaccessible to the ego.

From the psycho-analytical point of view these differentiations within the mind are supported by clinical findings and are indeed, formulated as a working hypothesis to explain them Further considerations involving the supposition of a death instinct are frankly more speculative and decidedly more obscure On page 55 we read that the self-preservative instinct must be assigned to the ego and the effort to understand how an instinct can belong to a part of the mind that has developed as a perceptual system is only one among many demanded One finishes the book with the regret that orthodox psychologists are still too remote from psycho-analysis to help it with effective and useful criticism Some of the basic problems of psychology are here considered and it should be possible to find a relation between the Freudian point of view and that of other workers.

PRACTICAL NURSING

For Male Nurses in the R A M C and other Forces Second edition By E M and A R Hassard London John Bale, Sons and Danielsson, Ltd 1927 Pp 407 4s 6*d*

The second edition of this excellent book has been brought up to date by various notes on modern methods such as insulin, and by a chapter on radiant heat, electricity, and massage, contributed by Miss Shinkwin We can find no reference either in the index or the text to the technique of giving of salines or of fixing the patient in Fowler's position. Those practical details which are included are given clearly and fully, and the commonest error of text-books on nursing is avoided—namely, that of giving enough detail to obscure the principles, yet not enough to enable the reader to carry out the procedure in practice The military pattern of handbook exemplified in manuals on drill and ceremonial is well adapted for the purpose of giving exact directions The arrangement of the subject matter seems unmethodical, but, on the whole, the ground is well covered and the book should have a much wider appeal than to those indicated in the title

CAVERNOUS SINUS THROMBOPHLEBITIS.

By Wells P Eagleton, M D, Medical Director, Newark Eye and Ear Infirmary New York The Macmillan Company 1927 Pp 196 20*s*

This monograph deals with a grave condition The author states that of 25 cases under his observation only four recovered He divides the cases into groups by distinguishing the source from which the infection reached the sinus, justifying a somewhat elaborate classification by variations in the operative technique which the different cases require The operative methods he suggests are certainly courageous, consisting in preliminary ligation of the common carotid followed by drainage of the cavernous sinus by a route which depends on the source of infection That he should have succeeded in saving four patients in this desperate condition is a strong recommendation for the methods he adopts The actual cases are described in the utmost detail so that the reader is able to form his own conclusions as to the treatment adopted in each The volume furnishes in a convenient form all the information at present available on a dangerous complication which is fortunately rare

READABLE PHYSIOLOGY AND HYGIENE

By J Argyll Campbell, M D, D Sc, Member of the Research Staff, National Institute for Medical Research, Hampstead London G. Bell and Sons, Ltd, 1927 Pp 229 3*s* 6*d*

This book, intended for beginners, is the latest addition to "Bell's Natural Science Series" It is, indeed, a readable little volume, and well illustrated The book is up to date in several respects; not only does insulin find a place, but the distinction between vitamins A and D is explained, and an account is given of "oxygen debt" The smoke nuisance is discussed and the danger of odours to health, a popular scare, is satisfactorily disposed of But the author does not seem to have realised that a modern text-book, even for young children, must deal with all the systems of the body There is no satisfactory account of the kidneys, nor indeed of the excretory channels at all and the physiology of sex is ignored except for a short paragraph (p 23) on the growth of the ovum The kidneys and generative organs are mentioned in a table on p 14, but the child's curiosity having been aroused Dr Campbell fails to satisfy it Perhaps in a future edition these omissions will be rectified, for the attention given to the historical aspect of physiology makes this book a better introduction to the subject than some others which give the false idea that all has long been known about the functions of the human body

Reports and Analytical Records.

SISTOMENSIN

(Clayton Aniline Co, Ltd, Upper Thames street, E C 4)

Since the publication of a leading article on March 12th we have received from the Clayton Aniline Company samples of Sistomensin, an ovarian extract prepared under E P. 113,311. We arranged for biological tests of these samples and the results are detailed below We have, therefore, pleasure in withdrawing the statement that none of the commercial material which has reached this country appears to fulfil the biological test of producing œstrus when injected subcutaneously into a female rat We regret that an incorrect impression of the potency of Sistomensin should have been conveyed

Rat	Resting S	Dose	23/3/27	24/3/27	25/3/27	26/3/27	Result
		c cm					hrs
A6	DE	0 5	PE	PE	?	PE	–
B3	DE	1*	PE	E	ME	Rem	+48
C1	DE	1	PE	PE (E)	(VP) E	ME	+60
C4	DE	0 5*	PE	PE	PE (E)	E	+60
C5	DE	0 5	DE	DE	PE (E)	E	+60
C6	DE	0 3	DE	PE	PE (E)	E	+
D3	DE	0 3	PE	E	(VP) E	—	+48
D4	DE	0 2*	DE	PE	PE	ME	?
D6	DE	0 2	DE	PE	PE	DE	–
E1	DE	0 2	DE	? PE	DE	? E	?
E3	DE	0 25	DE	PE	PE (VP)	E	+72
E4	DE	1	PE	PE (E)	(VP) ME	ME	+60
E6	DE	0 5	PE	PE	PE	PE	?

* Not mated DE = Di-œstrus PE = Pro œstrus E = Œstrus M E = Meta œstrus Rem = Remains VP = Vaginal plug.

3 rats, 1 c cm	all positive
4 rats 0·5 c cm	3 positive, 1 negative
2 rats 0 3 c cm	2 positive
1 rat 0 25 c cm	positive
3 rats 0 2 c cm	doubtful

Unit = 0 25 c cm

STOCK'S MEDICINAL BRANDY (THREE STAR).

Camiss and Stock, Distillery, Barcola

Wholesalers, Distributors for the United Kingdom, and Exporters V Canova and Co, 20, Piccadilly, London, W 1

On analysis this brandy gave the following results —

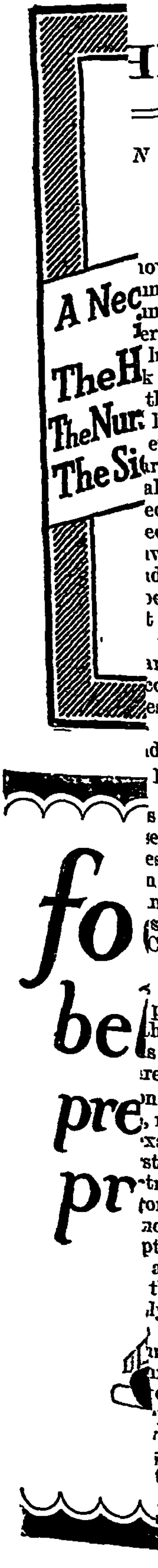
Alcohol, by volume	40 0	per cent.
Proof spirit	70 0	" "
Alcohol under proof	30 0	" "
Extractives	0 85	" "
" containing sugar	0 75	" "

Secondary products expressed as parts per 100,000 of absolute alcohol present —

Acidity (acetic acid)	60
Aldehydes	31
Furfural	3
Esters as ethyl acetate	176
Higher alcohols	130

A consideration of these secondary products indicates that the brandy is pure and that it has not been blended with neutral spirit The palate is mellow and agreeable, and the brandy is obviously suitable for medicinal purposes

Growth of the Royal Northern Hospital —At the annual Court of Governors it was reported that, at 4965 last year, the number of out-patients had more than doubled since 1914 There are now 400 beds and the maternity department has double the applicants for beds that can be accommodated The X ray department is being rebuilt and last year more than 12,000 light treatments were given. The income has increased from £24,000 in 1913 to £81,000 last year The average cost of each patient in 1926 was £3 15*s* 6¼*d*, and a small fractional reduction in the average cost of each of 241,000 out-patient attendances has saved £900 The year's work left a deficit of £7780, which was more than accounted for by a decrease in legacies



HE LANCET.

N SATURDAY, APRIL 9 1927

LISTER

iow ending has seen a memorial triumph
in any branch of human endeavour
intries, and various sources in those
ere has come a general endorsement
held by the medical profession that
k has effected more for the happiness
than any work of any one man No
his own single production, and LISTER,
employed in his great centralisation the
rches of others, notably of PASTEUR,
al investigations of putrefaction directed
eon in his search for the control of sepsis
ecessity to swell here the fully merited
iving any detailed story of LISTER'S
id procedures If we admit that there
een this necessity 25 years ago, it is
t out that thereby LISTER'S fame is
it is shown to have grown with the
irs, it is the incidental discovery which
covery, while the leader of the successful
es from height to height in the world's
fruits of that revolution become more
id more demonstrable We confine
publishing certain tributes from pure
applied science, and from the science
s voiced by recognised leaders in mem-
es delivered in London on Wednesday
es are recorded from one who was his
n in the critical era when he left behind
nced audiences of Scotland and arrived in
s as an evangelist, from a past President
College of Surgeons of England indicating
LISTER had definitely extended the
of surgery for the saving of life and the
pain and deformity, and from a past
he Royal College of Physicians of London,
s spoken in the church of LISTER'S
rew a picture of LISTER, the man

n of these tributes may be found in a
, reprinted from a volume of THE LANCET
xactly 60 years ago, in which LISTER
st message to the medical profession at
ting his great discoveries The passage
om the opening of an extended series of
ions dealing with compound fractures
ptic lines, and we can but admire the wide
accurate knowledge, and the simplicity
the message was delivered. The written
ly fit the various character pictures In
back in a time when it was the rule for
nd to heal up by a process of suppuration,
nfortunate victim of a compound fracture
ed at once to amputation in view of the
ptic fever, and of the frequent occurrence
ards of deaths from gangrene or pyæmia
stage of his researches LISTER was able
t many of these terrible conditions could
y the routine treatment by the application
cid to the exposed surfaces or abscesses
tent to leave his words to be judged by his colleagues, to them "that follow after righteousness" There is abundant evidence throughout the report of the scientific gift and assiduous research that must have been precedent to them, but not a word of personal protest As His Majesty the King said when receiving at Buckingham Palace on Monday last the delegates of the Lister Centenary from all parts of the civilised world "LISTER removed the horrors of sepsis from surgical operations, and for this he is rightly described as the father of modern surgery" He filled this position, which by acclaim was allowed him during his life with a simplicity that was as remarkable as his claims were pre-eminent

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PRISONS AND PRISONERS[1]

THE latest official report on British prisons is distinctly reassuring, for it everywhere reveals dissatisfaction with the present system and a determination to see it improved Prison reform depends so much on national sentiment and arouses such formidable opposition, that progress must necessarily be slow, but each step forward represents a real moral gain. One hopeful sign of advance is the decrease in receptions, in 1925–26 they were 882 less than in the previous year, and those in turn were 2597 less than in the year before Even more striking is the contrast between recent times and those before the late war, for whereas in the first five years of King Edward's reign the average yearly convictions per 100,000 population were 512, those for 1925–26 were only 110 The chief factors in this decline have been probation, allowance of time in which to pay fines, the working of the Mental Deficiency Act The activities of the various prisoners' aid organisations, and the training given during imprisonment have also contributed Much, nevertheless, remains to be done, and however gallantly voluntary workers may strive to make up for deficiencies in legislation, no further great advance will be made until these deficiencies are remedied One of the outstanding causes of failure in the present system, perhaps, is the infliction of short sentences The prospect of prison is a strong deterrent to those who have never been there, but to make sentences short is to take away much of their prophylactic effect upon others Moreover, no system of prison training can work smoothly if many of those subject to it are only kept for a few days, and can therefore be taught nothing but the simplest work. Alternatives, however, are difficult to suggest; one possible line of improvement is by developing the probation system, but this is itself open to abuse, and leaves a great deal to the discretion of the police.

The second grave deficiency in the system is the detention of many mentally defective or disordered persons, for whom prison is an unsuitable environment It is the practice of some judges and magistrates, in dealing with offenders whose mental soundness is doubtful, to pass sentence without asking for a medical report or before a report has been obtained It is so easy for a court to obtain a report on the state of a prisoner's mind, and meanwhile to hold him on demand, that little can be said in defence of this practice. Fortunately it is not very common, but even if it ceased altogether, a considerable number of mental defectives would still be put in prison, because of a clause in the Mental Deficiency Act that requires proof of the defect having existed "from an early age" This excludes for instance, the post-encephalitic delinquent The real problem is found in the borderline case of deficiency or insanity, in which law-breaking is due, not so much to a defective intelligence as to an emotional abnormality, and where the prisoner's mental abnormality is so elusive as to put him out of reach of certification under the existing Acts This type of prisoner cannot be sifted out of the present system by any measures except the enactment of a completely new standard of mental fitness, and the provision of institutions where he could be cared for, studied, and, as far as possible, improved If he could thus be eliminated, the prison system would be freed from one of the chief obstacles in the way of its evolution into what the Report calls "a place for hard work, discipline, and education, with a view for rehabilitation on completion of the sentence"

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[1] Report of the Commissioners of Prisons and the Directors of Convict Prisons for 1925–26 London H M Stationery Office. 1927 1s 6d

An International Penitentiary Congress was held in London in 1925, and its resolutions showed full recognition of the need for this reform Before, however, any scheme can be drafted for discussion by Parliament, it is necessary to know two things One is the standard by which the medical officers of prisons would decide what prisoners they would recommend for special treatment The second is the approximate number of prisoners for whom special accommodation would be necessary If these two points were determined with the authority of the Prison Commissioners, it should be possible for the Government to frame legislation providing for execution of the work by voluntary bodies under State direction and subsidy—an arrangement which works, passably well, at any rate, in many other departments of social welfare The evidence in favour of the principle is overwhelming, and, if a practical scheme could be put before Parliament, there is little doubt that it would become law

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ENCEPHALITIS, HERPES, AND ALLIED DISEASES

In spite of the vast amount of experimental work undertaken in the past few years on the experimental transmission of encephalitis lethargica to animals, the precise nature of the ætiological agent is still unknown, and the question of definite experimental transmission remains unsettled Nor has the relationship between this disease and herpes been satisfactorily defined The evidence brought forward recently has done little to clarify the situation, but the facts are worth noting, if only to emphasise the difficulties of the problem Japanese workers have been concerned with the blood picture of the disease and with its histological characteristics The Tokyo Institute for Infectious Diseases includes in its Scientific Reports for 1925 two papers on the severe epidemic in Japan in the late summer of 1924, when over 6000 cases were officially reported with a 55 per cent mortality M Ono and S Kojima found a neutrophil leucocytosis in the first week, together with a reduction of lymphocytes and eosinophils During the second week the neutrophil leucocytes decreased in number, to be followed in the third week by a relative and absolute lymphocytosis The blood picture only returned to normal after several weeks M Nishibe contributes his views on the vexed question as to what histological appearances may be regarded as typical He inoculated 94 rabbits, mostly subdurally, with brain emulsion and cerebro-spinal fluid from human material Histological examinations of the brains of these rabbits showed round-cell infiltration of the meninges in 7 4 per cent and perivascular infiltration in 5 3 per cent Control uninoculated rabbits showed similar meningeal and perivascular infiltration in 9 1 and 13 6 per cent respectively, these lesions being due to spontaneous meningo-encephalitis in the rabbit The presence of these round-celled infiltrations is, therefore, not considered by this observer to be due to human encephalitis virus Nishibe holds that the essential lesions of experimental encephalitis are widespread and marked degeneration of ganglion cells with vacuolation, disappearance of Nissl's granules, neuronophagy, hyperæmia, and small hæmorrhages The changes occur chiefly in the thalamus and midbrain, but any portion of the central nervous system may show lesions Using these changes as a criterion of experimental epidemic encephalitis Nishibe concludes that the virus is pathogenic for rabbits, is filtrable and transmissible

Two French workers, J Dechaume and F Lebeuf (*C R Soc de Biol*, 1926, xcvi, 43), also describe the results of intracranial inoculation of young rabbits in the meningeal space with emulsion of cortex, midbrain, and spinal cord taken aseptically from a fatal case of encephalitis lethargica 36 hours after death After an incubation period of six days one animal showed some degree of rigidity of the limbs, torpor with intervals of jerking of the feet, and died 24 hours later Cultures from the brain of this rabbit were consistently negative, but histological examination showed *perivascular and meningeal infiltration* with lymphocytes, increase of neuroglia nuclei, and degeneration of nerve-cells, as evidenced by disappearance of Nissl's granules and vacuolation of nuclei A second rabbit was inoculated with brain emulsion from this animal, showed no symptoms, and was killed on the eighteenth day after inoculation A similar histological picture was observed A third rabbit inoculated with material from the second showed no symptoms within a month The authors claim to have transmitted encephalitis lethargica to the rabbit, and do not consider that the above findings are due to the spontaneous meningo-encephalitis of the rabbit The histological appearance of the brains of rabbits suffering from herpetic encephalitis is the subject of a recent paper by C Da Fano (whose premature death we recorded last month) and J R Perdrau According to these observers the changes are extensive meningeal perivascular and parenchymatous infiltration, atrophy of nerve-cells, and disintegration of nerve-tissue, true and pseudo-calcification, reactive changes such as new production of blood-vessels, proliferation of connective tissues, and hyperplasia of neuroglia cells The changes are totally different from those found in the spontaneous meningo-encephalitis of parasitic origin, and are considered to be specifically herpetic When fresh these brains are non-infective, but when preserved in glycerol the virus of herpes can again be recovered These lesions in rabbits resemble more closely the picture of encephalitis lethargica in man than the acute herpetic disease described by numerous authors

Levaditi's name is everywhere associated with a series of able researches on the question of the possible relations and differences between the varieties of herpes, and of the apparent connexions between the latter and other toxi-infective states of the encephalitis class He has recently set out his ideas in a fine monograph,[1] which deserves perusal from cover to cover, whether the reader agrees with the conclusions or not is in reality almost a secondary consideration, for he will learn much in studying Levaditi's scientific method and cautious deductions Briefly, the thesis set forth is to the effect that herpes and zona (herpes zoster) are clinically and ætiologically distinct on the one hand, on the other, they are equally infective and contagious, and the virus of each belongs to the neurotropic category The major part of the volume treats of the author's personal experimentation in support of these views, and is replete with well-systematised data, the cumulative effect of which on the reader's mind is impressive if not absolutely convincing Much care is devoted to the interesting theory that the

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[1] L'herpès et le zona ectodermoses neurotropes By C Levaditi, Pasteur Institute, Paris Paris Masson et Cie 1926 Pp 388 5s

virus of herpes (*sensu strictiori*) is identical with that of epidemic encephalitis, though in this respect repetition of the experimental evidence seems called for, as we feel rather too much reliance is placed on an individual series of researches More speculative, perhaps, are the author's explanations of the way in which the virus passes from the skin by neural routes to the neuraxis, he coins the term "neuroprobasia" (neural advance, we might) say for this, imagining that the virus, once introduced in the protoneurone, proceeds forward by cultivating itself locally in successive neuronal segments and leaving behind it tissues self-vaccinated against it In the current issue of the *British Journal of Dermatology and Syphilis* J R PERDRAU reviews his own recent work on herpes and encephalitis, upholding LEVADITI's view of the identity of the viruses In the same journal A. C. ROXBURGH contributes an interesting article on the relations of the facialis, zoster, and genitalis varieties of herpes, particularly from the clinical aspect The relationship of herpes zoster and varicella is discussed, and the author thinks that a large number of cases of spontaneous zoster are due to the same virus as varicella, and cites a number of problems regarding the connexion between these two diseases. In another paper S. P. BEDSON shows that the fluid from certain human bullous lesions (other than herpes facialis and zoster) when inoculated intradermally into the plantar epidermis of the guinea-pig produced lesions characterised by vesicle formation and similar to those produced by herpes and foot-and-mouth disease The infective agent can be transmitted through a series of guinea-pigs and is immunologically different from febrile herpes The nature of the virus is as yet unknown, and these observations should stimulate further work on the subject German observers, E GILDEMEISTER and K. HERZBERG (*Deut Med Woch*, 1927, i, 138), have also studied the inter-relationship of variola, herpes, and foot-and-mouth disease, using the intracutaneous method of inoculation into the plantar epithelium of the guinea-pig Their experiments show that in guinea-pigs inoculated as above with herpes there is a partial immunity to variola. A similar immunity exists between variola-immunised animals and herpes This partial cross-immunity is definite and specific On the other hand, there is no immunological relationship between foot-and-mouth disease and herpes Whatever the difficulties of interpretation revealed by these results, the problem appears worthy of closer study than it has yet received

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NEWCASTLE-UPON-TYNE MOTOR ACCIDENTS.—The 176th annual report of the Royal Victoria Infirmary, Newcastle-upon-Tyne, states that last year 986 persons were treated for accidents directly due to motor traffic, 432 of whom were retained as in-patients This is double the number of the previous year, with the consequence that one ward is occupied nearly all the year round with cases of this description, and that the waiting-list is greatly lengthened, the number on the list at the end of the year was 2100 The average stay of in-patients was 15 3 days Out-patient attendances increased by nearly 44,000 Expenditure exceeded income by £9835 The whole situation of the hospital's needs is under consideration.

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION—The special courses in April will not start until the end of the month. The first will be a course in Medicine, Surgery and Gynæcology at the Royal Waterloo Hospital for Women and Children, beginning on April 25th, and lasting for three weeks (Fee £3 3*s*) On April 26th will be given the first of eight clinical demonstrations on Tropical Diseases, to be held at the London School of Hygiene and Tropical Medicine on Tuesdays and Thursdays at 2 0 P.M. for four consecutive weeks The more important tropical diseases will be illustrated as far possible by cases in the hospital, and the fee will be £2 2*s* Four lecture-demonstrations on Treatment by Electrotherapy will be given by Dr. C B Heald at the Royal Free Hospital, on Wednesdays at 5 15 P.M beginning on April 27th, the fee for the four demonstrations will be £1 1*s* Copies of all syllabuses, of the General Course programme, and of the *Post Graduate Medical Journal* are obtainable from the Secretary of the Fellowship at 1, Wimpole Street, London, W 1

Annotations.

"Ne quid nimis."

MOTORISTS AND THIRD PARTY RISKS.

AN important decision of the law of motor-car insurance will interest the medical profession which, more than any other, is daily exposed to the risks of the road In June, 1925, a motorist who had been to a wedding and had had too much to drink collided with a motor-bicycle on which were two young Army officers One of the two was killed, the other was injured. The motorist was charged with the manslaughter of the one and with unlawfully wounding the other He was convicted of the manslaughter and was sentenced to 12 months' imprisonment, the charge of unlawful wounding was not proceeded with. In addition to these criminal proceedings there was a civil action in which the surviving subaltern recovered £1500 damages and costs; the defendant motorist incurred costs in defending himself in both these actions. The latter thus had a big bill to pay; but the motor-car in which he was driving at the time of the accident was the subject of an insurance policy, and he therefore claimed to be indemnified in respect of the accident. The insurance company repudiated liability on the ground that the motorist was committing criminal acts in that he was drunk and was driving to the danger of the public, thus he increased the risk borne by the company, and it was contrary to public policy that he should be indemnified against the consequences of his criminal acts

In a judgment which the insurance company will probably take to a higher court, Mr. Justice Roche held that the company must pay up on the policy because the motorist's criminal act was negligent and not deliberate If the motorist had too much to drink at the wedding, it was both foolish and wrong; his lordship was, however, not prepared to hold that the motorist deliberately put himself into a condition of drunkenness and in that condition drove the car, nor to hold that there was such a degree of criminality as made it contrary to public policy that he should recover on the indemnity. It was difficult to believe that this motorist was any worse morally than people who in their sober senses drive to the danger of the public Both are guilty of negligence for which they are liable in a criminal court, but in neither case is the injury intended If he had had to decide that this motorist could not recover on his insurance policy, it would have meant that nobody who was driving to the public danger could rely on his insurance. "Unless I am compelled by decided cases to hold otherwise, I think it would be altogether contrary to public policy to hold that a man could not cover by insurance his liability to third persons arising out of dangerous driving; it would be a serious thing if juries, magistrates, and judges had to know that, if a man were convicted of any offence. the injured party could not recover any effective damage."

The decision, like a previous decision to the same effect by the late Mr. Justice Bailhache, draws a distinction between a deliberately criminal act and one which, though unlawful, is not done in circumstances in which it is manifestly unlawful or in which the person who does it knows it to be unlawful. The motorist was criminally negligent but he did not deliberately kill the Army officer. If Mr. Justice Roche had decided otherwise, the decision would have extended beyond the confines of motor-car insurance, and would have made itself felt in workmen's compensation insurance and elsewhere—for instance, where a workman was injured by an accident caused by a breach of the Factory Acts. The law. however, may be affected presently by fresh legislation compelling all motorists to insure against third party risks

RECENT WORK ON CONVULSIONS

There is at present no general agreement as to the precise part of the brain in which convulsions arise. W. E. Dandy and R. Elman[1] recently found that after injury of the pre-Rolandic cortex in dogs or cats, by incision or by inclusion of a foreign body, convulsions occurred for a time spontaneously, and for several months they could be induced with one-third to one-seventh of the dose of absinthe required to produce convulsions in the normal animal. In these experiments, all unilateral, the pre-Rolandic cortex was never completely destroyed but was only injured. The conclusions drawn from these experiments were: (1) that injury of the pre-Rolandic cortex lowers the threshold for convulsions, (2) tentatively, that injury to other parts of the brain lowers the threshold to a less degree. In a subsequent series of experiments Dandy[2] has studied the effects of removal of the pre-Rolandic cortex. He found that clonic convulsions could be produced at will by direct stimulation of this area in a dog under light anæsthesia, there was an optimal intensity of stimulation, a stimulus too light or too heavy producing only a single jerk of the corresponding part of the body. Deep etherisation inhibited clonic convulsions entirely, with a less deep etherisation the movements remained localised, and when the ether was still further reduced they quickly became generalised. Stimulation of all other parts of the surface of the cerebral hemispheres failed to produce a motor response except when rather powerful stimuli were used on the cortex or subcortex contiguous to the Rolandic area, stimulation of the cerebellum produced contractions but never clonic convulsions. A tunnel was made through the cortex posterior to the Rolandic area and the subcortical motor tracts were exposed just above the internal capsule, stimulation of these fibres, the motor cortex being intact and uninjured, produced clonic convulsions, local and general, seemingly just as effectively as stimulation of the pre-Rolandic cortex. Stimulation of the subcortex aside from the motor tracts did not produce a response. If during a localised clonic convulsion the motor cortex of the contralateral side was excised by a sweep of the knife, the convulsion instantly and completely ceased; if during a generalised clonic convulsion the motor cortex of both hemispheres was excised by two rapid sweeps of the knife the convulsion instantly ceased in all parts of the body. When, after excision of the pre-Rolandic cortex on one side the subcortical motor fibres were stimulated, a convulsion did not ever again result on the contralateral side of the body, but clonic convulsions might appear on the same side (the opposite pre-Rolandic cortex being intact). After excision of the pre-Rolandic cortex of both cerebral hemispheres, clonic convulsions could not again be induced in any part of the body with stimuli of any intensity applied to the subcortical motor fibres. Excision of the cerebellum had no effect on any of these results, stimulation of the cerebellum with the pre-Rolandic cortex either intact or removed from one or both sides failed to produce clonic convulsions.

These experiments seem to show that the pre-Rolandic cortex is essential for the development of clonic convulsions. Whether any other parts of the cortex are also essential remains to be examined. The cerebellum is apparently not essential and appears not to influence the occurrence or nature of clonic convulsions, the influence of other large cerebral structures is less easily determined, and in these experiments no attempt was made to investigate it. The part played by the pre-Rolandic cortex in the production of the convulsion is evidently not merely the sending of stimuli down the motor tracts, since in the absence of this portion of the cortex the sending of stimuli down the motor tracts does not produce a convulsion.

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[1] Bull. Johns Hopkins Hosp., 1925, vol. xxxvi., No. 40.

[2] Jour. Amer. Med. Assoc., Jan. 8th, 1927.

THE STORY OF THE LUCIFER

Another centenary which occurs this week is that of the humble friction match, for it was on April 7th, 1827 that John Walker recorded the first sale of the newly invented "friction light" at a shilling per hundred, with twopence extra for the tin case. Walker was born in Stockton-on-Tees in 1781, and he died there in 1857. For the greater part of his life he owned a pharmacist's shop in his native town, but it appears that as a youth he was apprenticed to a Mr. Watson Alcock, a surgeon in the town. After completing his apprenticeship, he went to London, presumably to complete his studies, returning to become Mr. Alcock's assistant. However, Walker could not stand the horrors of surgical operations and he soon abandoned his original profession, and after a suitable training he established himself as a pharmacist. It is a curious coincidence that two days before the first recorded sale of "friction lights" took place there was born a man who was responsible for stripping surgical operations of that horror which drove John Walker from the practice of surgery to the chemical laboratory, where the familiar match was born. In his student days Walker had shown great interest in chemical experiments and these, no doubt, led eventually to his discovery of the "friction light" as he called it. For many years, however, he was said to have made his "invention" by a lucky accident. Since he did not divulge the exact chemical composition of his matches—for he steadfastly refused to patent what might have brought him a considerable fortune—spurious imitations were to be obtained in London by about 1830, and the invention of the friction match has consequently been attributed to various other people at different times. Prof. William A. Bone has had access, however, to an old Day Book of Walker's and in a recent article[1] he offers an explanation of how the discovery was made of what was undoubtedly the first friction match. It appears from records in Walker's own writing that for some years he had been making Chancel's "oxymuriate matches" for some of his customers. These consisted of strips of wood tipped with a mixture of potassium chlorate, sugar, and gum which were ignited by contact with strong sulphuric acid. As early as 1825, if not before, Walker was experimenting with the production of a "percussion powder" for use in sporting guns. This consisted of a mixture of equal parts of potassium chlorate and antimony sulphide, and it appears to have occurred to him to use a similar mixture for tipping the Chancel "dipping" match. Such "friction lights" were ignited by rubbing them on glass paper, a piece of which was supplied with each case. The first recorded credit sale was in 1827, as mentioned above, and by 1829 the fame of the "match," a term which Walker now used, had reached London, where Faraday is said to have exhibited some at a lecture. Except for the placing of a brass tablet on Walker's old shop in the High Street, Stockton-on-Tees, nothing has ever been done in this country to recognise or commemorate the discovery of what is now probably the most universal saver of time and trouble.

A NEW PARTIAL VACCINE AGAINST GONORRHŒA

The production of immunity to the gonococcus is not yet properly understood and is denied by some as a natural process in the cure of the disease. The discovery and trial of a new principle in the vaccine therapy of gonorrhœa is reported in a short preliminary paper in the *Journal of the Royal Army Medical Corps* for March 1927, by Major E. C. Lambkin, Major Lyn Dimond and Captain W. J. Robertson. The idea underlying their work was, they state, "to find a non-toxic gonococcal vaccine for use (*a*) intraurethrally as a local immunising agent as used by Besredka in other conditions, and (*b*) for general use to be applied intradermally, subcutaneously, intramuscularly, or intravenously" In order to achieve this the gonococcus was grown on special media washed off and fractionated. When the germ is grown on a medium rich in animal nucleo-protein one-third of the strains develop polar (Babes-Ernest) bodies composed of alpha-nucleo-protein and beta-nucleo-histone A 2 per cent salt solution, while dissolving the latter, is able to separate these polar bodies from the organisms and centrifuging allows the α-nucleo-protein to be separated from the β-nucleo-histone which is in solution by the saline Both bodies possess antigenic properties but the β-nucleo-histone is more potent than the other besides being relatively non-toxic and therefore especially suitable for vaccine use. For intradermal, subcutaneous, intramuscular, or intravenous injections a strength is used which is the product of 1000 million gonococci per c cm. in 2 per cent saline. 0 2 c cm. of this being injected every two days For intraurethral injection a standard solution in 2 per cent saline is made so that the nucleo-protein of 100,000 millions of organisms is contained in 15 c cm To this is added 1 per cent of sodium taurocholate, the reaction adjusted to a pH of 7·2, and brought up to 100 c cm. with mucin The urethra is irrigated with a 1 in 20,000 solution of potassium permanganate and a dose of 20 c cm of the vaccine preparation is then injected and retained for three or four hours This is repeated daily as long as gonococci are found in the discharge. As a test of cure endotoxin from strains not showing polar bodies is used The results satisfy the authors, but fuller reports will be awaited with interest The principle, it seems, is new and depends on the observation that the antigenic properties of the vaccine are confined to the polar bodies The authors regard the pH content of the urine as a factor of importance and it might be worth while to inquire what are the results of weak permanganate with an optimum pH of urine but without vaccine The difficulties of producing the vaccine in the quantities desired remain to be overcome but the principle, if substantiated, should be of wide application

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[1] Nature, April 2nd, 1927, p. 495.

WITCHCRAFT AND MEDICINE.

"Dress the wound with warm wine only, and lift no lancet against this young swordsman, for he was born under the Sign of Gemini, which is opposite in all things to the Sign of Sagittarius Therefore the sight of pointed weapons induces in him a kind of madness and he is very handy with a cutting edge himself" The speaker is an English man-at-arms who strides into a spirited mediæval romance by Mr Leslie Barringer[1] The mock-portentous conclusion to this piece of good advice reveals an age when common sense in treatment of wounds and injuries required metaphysical justification. Cupping and suppurative medicaments being thus discouraged, we are told that the hero's gashed thigh "had a better chance of healing than was given to many such wounds in those times" Mr Barringer has brought his casual use of medicine and surgery into apt line with his period The latter is apparently the middle of the fifteenth century; the scene of the story is an imaginary European kingdom with a Breton flavour about its coast-line. but a frontispiece map removes the Ruritanian difficulty usual in fiction of this kind The action is well-sustained, and the love-interest inevitable on popular grounds but the book is remarkable for its treatment of the theme of witchcraft The publisher's announcement promises "witches most foul," but the hero—a runaway and a minor when the main action opens—blunders into knowledge of the witches which sets the latter in at least as favourable a light as his relatives and peers amongst the almost sovereign barons of the country. Briefly witchcraft is here visualised not as a form of heresy but as a survival of heathendom—a debased Dianic cult driven into the hills and waste places, but deeply rooted in the peasantry (*pagani* indeed), and affording by its manifestation some relief from the appalling social weight at the base of the feudal pyramid We are reminded of the words of Michelet in *La Sorcière*: "the mediæval peasant would have burst, but for his hope in the Devil" No clear picture is shown of ritual or operative magic. but the suggestion seems to be that the power of the witches rested ultimately upon drugs Members of a coven are seen riding on horseback to their assembly; discovery of a secret stair dispels a suspicion of levitation. a too-confiding witch employs ventriloquism to re-establish awe in her companion. Naturalistic explanation is not however. overdone, and the darker features of the cult are not ignored Incidentally the one potion used to further the action is a pharmaceutical failure; an aphrodisiac is administered. but circumstances are unfavourable, and the end-result is homicide This is a good romance, which may be recommended not only to novel readers. but to students of that age when medicine and mysticism were inextricably mixed.

FORM AND FUNCTION

Parents, school-masters, and school-mistresses must often feel proud of the lusty young things which grow up nowadays under their guidance. The well-being of the baby is measured by the balance, which even in its most domestic form is, at any rate, a more objective criterion than nurse's prejudiced eulogy. In later years children are weighed and measured as they pass through their school terms, and finally there are produced the big. handsome, wholesome-looking young people of 20 and thereabouts who have become almost commonplace No one can doubt that there has been a general increase in size; school-boys of over 6 feet and weighing 12 stone or more seem quite common now, and the change in school-girls is perhaps even more striking A recent number of the *Journal of the American Medical Association* (March 19th, 1927, p 908) gives some data for American boys, showing that they are taller by fully 2 inches than were comparable boys 50 years ago Nor will anyone doubt that this change is due to hygienic betterment and especially to the more ample diet, caloric and vitaminic, to which so much attention is now paid The result is artistically beautiful and must be cheering to the dietitians But is it wholly for the good? Is there any evidence that larger people are even healthier than their more stunted companions? And in a field less open to quantitative measurement, is there any evidence that they will make better citizens—physically. mentally, and morally? The answers to these questions, if they can ever be had. must wait the experience of the future Meanwhile data are obtained which increase one's misgivings The experiments of Drs J E. Anderson and A. H Smith[1] have achieved some notoriety in the lay press They show that rats which are so underfed that they do not increase in weight can learn their way through a maze more quickly than normally fed and normally growing controls, and can relearn an old puzzle more quickly, too, after a period of abstention from experience of it When the stunted animals were fed up and reached the weight proper for their age they were no cleverer than their companions. Such results are much more than amusing, for they bring within the range of tolerably accurate experimentation that conflict between body and mind which has been perceived by many thoughtful people since man reached the stage of civilisation at which he could sometimes eat less than he could get A certain amount of restraint and parsimony are seldom out of place. It is possible that "this feeding business" is being overdone and that tissues which have grown rather less exuberantly may perform their offices more satisfactorily

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[1] 'Gerfalcon' By Mr Leslie Barringer London: William Heinemann Ltd. 1927 Pp 310 7s 6d.

[1] Jour Comp. Psychol, 1926, vi, 337

CONTROL OF TUBERCULOSIS IN U S A

IN an address recently given to the New York Tuberculosis and Health Association Mr. Godias J. Drolet, statistician to the Association, provides some interesting statistics of tuberculosis in the United States From a table giving the numbers of cases of tuberculosis and of deaths from tuberculosis reported in 1924 in 23 States and 11 cities, it is evident that, as in most countries, case-notification is very incomplete, thus in the State of Washington the number of cases notified is practically the same as the number of deaths registered—viz, 2202 cases and 2183 deaths In Rhode Island the deaths were more numerous than the reported cases A useful table is that giving the populations, deaths from tuberculosis, and beds available for tuberculosis in each State. In the whole of the States there were, in 1924, 99,579 deaths from tuberculosis and 73,715 beds available Another table summarises the reported results of sanatorium treatment obtained in answer to a questionnaire Information concerning condition on discharge was obtained from institutions disposing of 31,581 beds, of these discharges, 20 per cent represented deaths, 23 per cent condition unimproved, 42 per cent condition quiescent or improved, 15 per cent disease arrested With regard to utilisation of facilities, 221 institutions with 38,726 beds reported on July 1st, 1926, that 32,529 patients were under treatment, a user of 84 per cent The range of weekly cost of maintenance is very wide, it varies in New York State from 10 to 39 dollars, in California from 15 to 41 dollars, in New Jersey from 10 to 28 dollars More than 40 per cent of all patients remain in a sanatorium or hospital less than three months, and only 10 per cent of those admitted were classified as in the incipient stage of the disease

NEW METHODS OF TREATING BOILS AND COLD ABSCESSES.

THERE has been a wide awakening of interest of late in what is called protein shock therapy, the mechanism of which is the stimulation of bodily resistance by means of an injection of foreign protein For some time it has been almost impossible to open a medical journal without finding some reference to the results obtainable in various local infective conditions by injecting milk, albumin, or a vaccine of some kind or other To the scientific mind there is something unsatisfactory about irritating the whole body with a foreign substance in the hope of securing reaction in one or two centres of infection but without knowing what is happening or why. Dr. Franz Kuhn's latest paper[1] on the treatment of boils deals with an injection process that acts directly on the focus of infection, and produces an immune reaction throughout the whole cellular structure of the inflamed tissue, the substance employed being the patient's own blood The cupping of boils is no new thing, but, according to Dr Kuhn, unless capillary hæmorrhage is produced throughout the whole of the inflamed tissue much of the healing power of the healthy blood is lost Bier's apparatus, he says, with a lift of at most 50–100 mm Hg, does not break the capillaries, it only draws into the boil what would filter through their walls Success has been claimed for the injection of the patient's blood around the boil with a needle, but at best the effect is momentary and, in most cases the operation, in Dr. Kuhn's opinion, is useless. His technique is described in an earlier number of the same journal.[2] He employs a vacuum powerful enough to induce extensive capillary hæmorrhage, followed by an energetic use of hot packs to promote hyperæmia, and he claims that some boils need only one application of this treatment

In the *Presse Médicale* for March 19th Prof. H L Rocher, of Bordeaux, claims excellent results, in cases of cold abscess where no fistula has developed, from lavage with water at 60° C (140° F). He recommends it chiefly for *abcès ganglionnaires*, and articular and bone abscesses, especially those which occur in Pott's disease and in coxalgia Moreover, when the epidermis is on the point of rupturing, this treatment will often prevent a break by thickening and toughening the remaining layers One of its principal advantages is the rapidity with which it takes effect The water is boiled for ten minutes and allowed to cool to 140° F., where it is maintained Hayem's serum may, it is suggested, advantageously be used instead of water The needle or trocar used must be large enough to allow of easy aspiration First of all the collection of pus is withdrawn and then the abscess cavity is well laved with the hot fluid The caseous detritus on the pyogenic membrane is speedily broken up and carried away through the syringe at each aspiration, and by the end of the lavage the membrane is generally bleeding If the evacuated fluid is pink only the process may be continued for another three to five minutes, but if it is red the operation should cease All water should be withdrawn and, if the puncture is so large as to cause anxiety lest a fistula develop, a small poultice should be applied for 48 hours Prof Rocher admits that the treatment is somewhat painful, but not beyond the endurance of the ordinary adolescent or adult, he does not mention what anæsthetic he uses for children The process has generally to be repeated a certain number of times before the abscess is entirely dry, but some collections, even large ones, disappear after one lavage The method, he claims, gives better results than the injection of modifying liquids, and its simplicity should appeal to the practitioner.

THE LATE DR. F. B POWER

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THE LISTER CENTENARY.

FIRST DECLARATION OF THE ANTISEPTIC SYSTEM.

THE first actual revelations of the clinical outcome of the antiseptic doctrines were contained in a series of articles which commenced their course in THE LANCET of March 16th, 1867. Lister's conclusions were based on a series of cases, which, like the one that follows, illustrated for all who could follow his argument the profound revolution which he was inaugurating by bringing the treatment of compound fractures into a position where results hitherto undreamt of could be obtained.

ON A NEW METHOD OF TREATING COMPOUND FRACTURE, ABSCESS, ETC., WITH OBSERVATIONS ON THE CONDITIONS OF SUPPURATION.

BY JOSEPH LISTER, ESQ., F.R.S.,
PROFESSOR OF SURGERY IN THE UNIVERSITY OF GLASGOW

THE frequency of disastrous consequences in compound fracture, contrasted with the complete immunity from danger to life or limb in simple fracture, is one of the most striking as well as melancholy facts in surgical practice.

If we inquire how it is that an external wound communicating with the seat of fracture leads to such grave results, we cannot but conclude that it is by inducing, through access of the atmosphere, decomposition of the blood which is effused in greater or less amount around the fragments and among the interstices of the tissues, and, losing by putrefaction its natural bland character, and assuming the properties of an acrid irritant, occasions both local and general disturbance.

We know that blood kept exposed to the air at the temperature of the body, in a vessel of glass or other material chemically inert, soon decomposes; and there is no reason to suppose that the living tissues surrounding a mass of extravasated blood could preserve it from being affected in a similar manner by the atmosphere. On the contrary, it may be ascertained as a matter of observation that in a compound fracture twenty-four hours *after* the accident the coloured serum which oozes from the wound is already distinctly tainted with the odour of decomposition, and during the next two or three days, before suppuration has set in, the smell of the effused fluids becomes more and more offensive.

This state of things is enough to account for all the bad consequences of the injury.

The pernicious influence of decomposing animal matter upon the tissues has probably been underrated, in consequence of the healthy state in which granulating sores remain in spite of a very offensive condition of their discharges. To argue from this, however, that fetid material would be innocuous in a recent wound would be to make a great mistake. The granulations being composed of an imperfect form of tissue, insensible and indisposed to absorption, but with remarkably active cell-development, and perpetually renovated as fast as it is destroyed at the surface, form a most admirable protective layer or living plaster. But before a raw surface has granulated an acrid discharge acts with unrestrained effect upon it, exciting the sensory nerves and causing through them both local inflammation and general fever, and also producing by its caustic action a greater or less extent of sloughs, which must be thrown off by a corresponding suppuration, while there is at the same time a risk of absorption of the poisonous fluids into the circulation.

This view of the cause of the mischief in compound fracture is strikingly corroborated by cases in which the external wound is very small. Here, if the coagulum at the orifice is allowed to dry and form a crust, as was advised by John Hunter,[1] all bad consequences are probably averted, and, the air being excluded, the blood beneath becomes organised and absorbed, exactly as in a simple fracture. But if any accidental circumstance interferes with the satisfactory formation of the scab, the smallness of the wound, instead of being an advantage, is apt to prove injurious, because, while decomposition is permitted, the due escape of foul discharges is prevented. Indeed, so impressed are some surgeons with the evil which may result from this latter cause, that, deviating from the excellent Hunterian practice, they enlarge the orifice with the knife in the first instance and apply fomentations, in order to mitigate the suppuration which they render inevitable.

Turning now to the question how the atmosphere produces decomposition of organic substances, we find that a flood of light has been thrown upon this most important subject by the philosophic researches of M. Pasteur, who has demonstrated by thoroughly convincing evidence that it is not to its oxygen or to any of its gaseous constituents that the air owes this property, but to minute particles suspended in it, which are the germs of various low forms of life, long since revealed by the microscope, and regarded merely accidental concomitants of putrescence, but now shown by Pasteur to be its essential cause, resolving the complex organic compounds into substances of simpler chemical constitution, just as the yeast-plant converts sugar into alcohol and carbonic acid.

A beautiful illustration of this doctrine seems to me to be presented in surgery by pneumothorax with emphysema, resulting from puncture of the lung by a fractured rib. Here, though atmospheric air is perpetually introduced into the pleura in great abundance, no inflammatory disturbance supervenes; whereas an external wound penetrating the chest, if it remains open, infallibly causes dangerous suppurative pleurisy. In the latter case the blood and serum poured out into the pleural cavity, as an immediate consequence of the injury, are decomposed by the germs that enter with the air, and then operate as a powerful irritant upon the serous membrane. But in case of puncture of the lung without external wound, the atmospheric gases are filtered of the causes of decomposition before they enter the pleura, by passing through the bronchial tubes, which, by their small size, their tortuous course, their mucous secretion, and ciliated epithelial lining, seem to be specially designed to arrest all solid particles in the air inhaled. Consequently the effused fluids retain their original characters unimpaired, and are speedily absorbed by the unirritated pleura.

Applying these principles to the treatment of compound fracture, bearing in mind that it is from the occur in attacks with relatively long periods of good digestion between The absence of vomiting and hæmatemesis are of no importance in the diagnosis In gall-bladder dyspepsia pain is present but is " unpunctual " and flatulence or a feeling of " distension " are prominent symptoms The patient is usually a stoutish married woman of middle age Appendix dyspepsia can only be diagnosed with certainty by the results of exploration

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[1] See Works of J. Hunter, edited by Palmer, vol. i., p. 429.

Diagnostic Aids

Accessory diagnostic aids are furnished by test-meals and X ray examination The test-meal, rarely decisive in ordinary practice, can usually be dispensed with In gall-bladder and appendix cases and in chronic gastric ulcer it is of little help, in chronic duodenal ulcer a high curve is very constant and its absence should throw doubt on the diagnosis, in carcinoma low acidity is the rule but, and especially in an early case, the presence of even free HCl does not negative the possibility of cancer Chronic gastritis is perhaps the only organic condition which can be detected by a test-meal alone (excess of mucus) It is, however, comparatively rare and is certainly too often diagnosed Its treatment does not concern us here

X ray examination, especially if it is done by an expert is of far greater value than the test-meal A negative result however should not be allowed too much weight if the clinical history points the other way It is of most help in the detection of *chronic* ulcers and of carcinoma, but in the earliest stages of the latter even X rays may fail to reveal the disease, and the only method of making a diagnosis early enough to give operation a chance is by exploration Doctors should have the moral courage to insist upon this if the symptoms are suggestive and do not disappear after a month's treatment on functional lines

Visceroptosis is, in women, the cause of much difficulty in diagnosis as its symptoms may sometimes simulate those of organic disease real pain and even vomiting being occasionally caused by it If radiographic investigation fails to show organic disease and if the symptoms persist after treatment for the visceroptosis on the usual lines it may be necessary to resort to exploration

Two Great Groups

Organic disease having been eliminated, the functional cases may be divided for purposes of treatment into two great groups (1) the hypersthenic (hypertonic), (2) the asthenic (atonic)

The hypersthenic cases are commoner in men and are characterised by increase of gastric tone a tendency to pyloric spasm, and superacidity of the contents The asthenic cases are met with chiefly in women, are frequently associated with the presence of gastroptosis and show diminution of tone and motility, and often though by no means always, subacidity of contents The chief symptoms in the hypersthenic cases are " acidity " and hunger-discomfort; in the asthenic group, flatulence, " slow digestion," and a " sinking " sensation when the stomach is empty

In both groups there is a nervous basis In the hypersthenic, nervous irritability and exaggerated reflex excitability, in the asthenic, nervous exhaustion and depression The recognition of the underlying nervous factor is of great importance for it means that *treatment must first be directed to the nervous system* This involves an inquiry into the patient's whole mode of life with the object of getting rid, so far as possible, of all causes of physical, mental, and emotional strain Sometimes it is advisable to send the patient away for a holiday, choosing a bracing inland place for the asthenics and a more sedative one for the hypersthenics In the more severe cases of the asthenic type complete rest in bed may be required along perhaps with abdominal massage and other forms of physical treatment Even in the milder cases rest in the recumbent position for a short time before and after meals is of great value In the abolition of emotional causes of exhaustion psychotherapy is often of help In all cases, whether hypersthenic or asthenic regular meals, well cooked, attractively served, and preferably eaten in company should be insisted upon, but the wholesale extraction of teeth in functional dyspepsia—still too often done—is strongly to be deprecated The dietetic and medicinal treatment in the two groups may be considered separately

Hypersthenic Type

(*a*) *Diet*—In this type the diet must be planned to meet the excess of acidity There are two views as to how this may best be done Some believe in giving foods which " fix " the free acid by combining with it and so rendering it harmless Proteins do this, and so the supporters of this line of treatment allow meat and other animal foods freely Others take the view that the protein foods stimulate the production of gastric juice, and so confine the diet largely to carbohydrates I am an adherent of the first view, and allow meat and other animal foods, but limit starches and sugars Fats are given freely, seeing that they tend to restrain secretion, but all direct stimulants of secretion should be forbidden, chief of these being salt, spices, pickles, and the extractives contained in soups and gravies Alcohol is also a stimulant of secretion Sour things should naturally be interdicted where the acidity is high, and tea (except China) comes under the same ban because of its tannic acid

(*b*) *Drugs*—The drugs useful in this type are those which restrain secretion and relax spasm, those which neutralise secretion, and those which are nerve sedatives Belladonna acts in the first of these ways and may be given in 10 or 15 drop doses in water before breakfast or in a smaller dose before each meal The best antacids are the carbonates of bismuth and magnesia or magnesium oxide, and these may be given in full doses about two hours after meals If the magnesia causes diarrhœa some calcium carbonate may be substituted for it Sometimes it is more convenient for the patient to carry the antacid in the form of a lozenge (troch. bismuth co, absorbent lozenges, &c)

The bromides are the best nerve sedatives, and may be given along with the antacid in such doses as are indicated

The Asthenic Type

(*a*) *Diet*—The diet in this type should be arranged not with a view to the state of the gastric secretion, but in order to suit the impaired motor power Meals should therefore be small, frequent, and dry, for a large meal and the weight of fluid tend to over-distend an atonic stomach Bulky foods such as vegetables (with a few exceptions like spinach, asparagus, and the white part of cauliflower) should be avoided, and so should raw fruits Crisp toast and rusks should be substituted for bread, and potatoes taken sparingly, and only if mashed Articles which stimulate secretion (condiments, &c) are now of use, and alcohol in not too dilute a form may often be taken with advantage at meals

(*b*) *Drugs*—These are of use to stimulate secretion and increase tone, and a mixture of small doses of a soluble alkali (sod bicarb, gr v) with *nux vomica* and a bitter infusion before meals meets most indications The exhibition of acids after meals and of " ferments " of any kind is rarely called for In overcoming constipation, which is often present, the more tonic aperients (aloe, cascara, rhubarb, and senna) should be chosen

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CHURCH OF SCOTLAND DEACONESS HOSPITAL—The annual cost per bed in this Edinburgh Hospital has increased from £43 in 1914 to £129 Hitherto the institution has paid its way, but last year there was a small adverse balance.

of imperfect pus was produced from the surface of the sore, but not a drop appeared from beneath the skin. It was now clear that there was no longer any danger of deep-seated suppuration, and simple water-dressing was employed. Cicatrisation proceeded just as in an ordinary granulating sore. At the expiration of six weeks I examined the condition of the bones, and, finding them firmly united, discarded the splints, and two days later the sore was entirely healed, so that the cure could not be said to have been at all retarded by the circumstance of the fracture being compound.

This, no doubt, was a favourable case, and might have done well under ordinary treatment. But the remarkable retardation of suppuration, and the immediate conversion of the compound fracture into a simple fracture with a superficial sore, were most encouraging facts.

MEMORIES OF A HOUSE SURGEON *

BY SIR STCLAIR THOMSON,

PAST PRESIDENT, ROYAL SOCIETY OF MEDICINE

"DURING the siege of Paris (1870-71) Nélaton, in despair at the sight of the death of almost every patient after operation, declared that he who should conquer purulent infection would deserve a statue made of gold." This passage occurs in the "Life of Pasteur." One hundred years ago to-morrow, April 5th, 1827, Joseph Lister was born, the man through whose work surgical purulent infection was conquered for all humanity and for all time. There is an indifferent and somewhat neglected bust of him in Portland-place, but the statue of gold has not yet been erected, although wound infection was conquered in Lister's own lifetime. Lister achieved more for mankind than all the surgeons from the beginning of history. Before his coming the results of surgical wounds were hardly better than in the dark ages and yet he lived to see his work and teaching result in the saving of more lives than all the military heroes of all the ages have destroyed.

Lister, a simple and a noble man, could never have understood the spirit of the poet who exclaimed "Let fame which all hunt after be written on our tombs." If, indeed Lister ever had hankered after posthumous fame, it would probably have been the words of Byron he would have quoted: "My epitaph shall be my name alone."

One hundred years ago to morrow Lister was born. Fifty years ago, this year, he left Edinburgh for London. He was then 50 years of age. On the same day that he entered King's College Hospital as one of its surgeons, I entered it as a student—half a century ago. I came under the potent power of his personality. I am poorly prepared to speak of him as a scientific surgeon, and of the miracle he wrought in the history of human suffering. These matters will be dealt with by distinguished exponents during this week of Centenary Celebration. But he exerted on those who came into personal contact with him an influence, a devotion, and an elevation of thought that had in it a touch of inspiration.

Lister was of pure English stock. No one from Scotland, Ireland, or Wales can claim to see a Celtic fringe to the warp and woof of his nature. His people came from Yorkshire. His father was a prosperous wine merchant in the City of London, from whom he inherited other things besides a competence. Amongst these was a taste for scientific pursuits. The wine merchant was deeply interested in the science of optics, he helped to perfect the microscope, and was a Fellow of the Royal Society.

The house where Lister was born and passed his boyhood, Upton Lodge, was in his days quite in the country, in the county of Essex, some ten miles from London, and was surrounded, 100 years ago, with its 69 acres of fields and gardens. It is a charming, substantial, and commodious Queen Anne mansion; it still exists as an oasis beyond the desolation of mean streets which have joined the East-End of the City of London to the borough of West Ham. Refinement and culture still dwell there, for Upton Lodge is now the vicarage of St. Peter's parish, and our Society is delighted to welcome the vicar, the Rev. A. J. Parry.

After attending private schools in Hitchin and Tottenham, Lister entered University College, London, in 1844, at the age of 17. In University College Hospital he was present at the first operation performed in this country under ether, by Liston, on Dec. 21st, 1846. As chill penury did not repress his anxiety to see and know the best in the surgical world, he journeyed in 1853, at the age of 26, to Edinburgh, so as to study under Syme. This great surgeon—to whose memory and teaching Lister always remained devotedly attached—was a man of whom it was said that he never wasted a word, nor a drop of ink, nor a drop of blood. I need hardly say that this thrifty man was a Scotsman! Lister became his assistant, and, a few years later, his son-in law.

From Edinburgh, Lister, at the early age of 33, was called to fill the Chair of Surgery in the University of Glasgow (1861). There he remained until 1869, and it was chiefly during these years that he laid the foundations of antiseptic surgery.[1] In 1869, at the age of 42, he returned to Edinburgh as Professor of Surgery in the University, and there he passed the eight years of his life which he afterwards referred to as the happiest, as they certainly were the fullest and most flowing.

In 1877, exactly 50 years ago, Lister was invited to London. Why did he come south? It was not to hunt for honours and distinctions; his Quaker character thought little of such adornments. It was not due to any mercenary attraction. He was the possessor of a sufficient private fortune, and the commercial side of our profession had no attraction for him. In Edinburgh Lister had many friends; his early years there, his Scotch wife, and his position in the University all were powerful to retain him in the Athens of the north and prevent him from migrating south. But, although Edinburgh students were radiating from the north, imbued with his principles, and although wise men from afar came there and carried to distant lands the glad tidings of great joy, yet still, and for many years afterwards, these principles were inadequately appreciated, were not generally admitted, and consequently their application was still imperfectly carried out. All who knew him are convinced that he accepted the invitation to London simply and solely because he felt that on the larger and more central stage of the metropolis he could so demonstrate his work that he would the sooner fulfil his mission and win the whole world to accept his principles. As his biographer records, "the antiseptic doctrine had been accepted in every part of the world that counted except London, where alone it made but little way." In taking leave of his class in Edinburgh he announced that it was only sense of duty which impelled him to leave a school where he had received great kindness and to take a cold plunge into what he said "might prove to be a sea of troubles."

He was indeed right, a cold and stormy sea of trouble was awaiting him in London 50 years ago. Lister returned from his professorships in two Scottish Universities to his own southern people, to the city of his birth, and the country of his own form of faith. He returned to his own and his own received him not. Many peoples, in all times, have been addicted to stoning their prophets. England and London, half a century ago, were not backward in demonstrating

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* Address delivered before the Royal Society of Medicine on April 4th.

[1] THE LANCET, 1867, i. 326. In this paper, Lister, after quoting Hunter's observations on healing under a crust, makes his first published references to the researches of Pasteur and to the use of carbolic acid.

vitality of the atmospheric particles that all the mischief arises, it appears that all that is requisite is to dress the wound with some material capable of killing these septic germs, provided that any substance can be found reliable for this purpose, yet not too potent as a caustic.

In the course of the year 1864 I was much struck with an account of the remarkable effects produced by carbolic acid upon the sewage of the town of Carlisle, the admixture of a very small proportion not only preventing all odour from the lands irrigated with the refuse material, but, as it was stated, destroying the entozoa which usually infest cattle fed upon such pastures.

My attention having for several years been much directed to the subject of suppuration, more especially in its relation to decomposition, I saw that such a powerful antiseptic was peculiarly adapted for experiments with a view to elucidating that subject, and while I was engaged in the investigation the applicability of carbolic acid for the treatment of compound fracture naturally occurred to me

My first attempt of this kind was made in the Glasgow Royal Infirmary in March, 1865, in a case of compound fracture of the leg It proved unsuccessful, in consequence, as I now believe, of improper management, but subsequent trials have more than realised my most sanguine anticipations

Carbolic acid[3] proved in various ways well adapted for the purpose It exercises a local sedative influence upon the sensory nerves, and hence is not only almost painless in its immediate action on a raw surface, but speedily renders a wound previously painful entirely free from uneasiness When employed in compound fracture its caustic properties are mitigated so as to be unobjectionable by admixture with the blood, with which it forms a tenacious mass that hardens into a dense crust, which long retains its antiseptic virtue, and has also other advantages, as will appear from the following cases which I will relate in the order of their occurrence, premising that as the treatment has been gradually improved, the earlier ones are not to be taken as patterns

Joseph Lister

A photograph taken at Glasgow in 1868

Case 1 — James G——, aged 11 years, was admitted into the Glasgow *Royal Infirmary* on August 12th, 1865, with compound fracture of the left leg, caused by the wheel of an empty cart passing over the limb a little below its middle. The wound, which was about an inch and a half long, and three-quarters of an inch broad, was close to, but not exactly over, the line of fracture of the tibia A probe, however, could be passed beneath the integument over the seat of fracture and for some inches beyond it Very little blood had been extravasated into the tissues

My house surgeon, Dr Macfee, acting under my instructions, laid a piece of lint dipped in liquid carbolic acid upon the wound, and applied lateral pasteboard splints padded with cotton-wool, the limb resting on its outer side, with the knee bent It was left undisturbed for four days, when, the boy complaining of some uneasiness, I removed the inner splint and examined the wound It showed no signs of suppuration, but the skin in its immediate vicinity had a slight blush of redness I now dressed the sore with lint soaked with water having a small proportion of carbolic acid diffused through it, and this was continued for five days, during which the uneasiness and the redness of the skin disappeared, the sore meanwhile furnishing no pus, although some superficial sloughs caused by the acid were separating. But the epidermis being excoriated by this dressing, I substituted for it a solution of one part of carbolic acid in from ten to twenty parts of olive oil which was used for four days, during which a small amount ever perform satisfactorily the antiseptic treatment of wounds." How far the London surgeons were from being able to appreciate this is shown by an annotation in THE LANCET in 1877 (vol. i., p. 361) which said: "In many quarters Mr. Lister has acquired the reputation of a thoughtful painstaking surgeon and has done some service to practical surgery by insisting on the importance of cleanliness in the treatment of wounds although this has been done by the glorification of an idea which is neither original nor universally accepted."

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[3] Carbolic acid is found in the shops in two forms—the glacial or crystalline, solid at ordinary temperatures of the atmosphere, and the fluid, which sometimes passes under the name of German creasote The fluid variety is sold in various degrees of purity The crude forms are objectionable from their offensive odour, but the properly rectified product is almost fragrant Different samples, however, differ much in energy of action, and hence, though I have hitherto employed the liquid kind in compound fracture, it would probably be better to use the crystallised form, melting it by placing the vessel containing it in warm water for a few minutes Carbolic acid is almost absolutely insoluble in water, but dissolves readily in various organic liquids, such as the common fixed oils or glycerine

Still, making all allowances, it is difficult to explain why London was the last place to accept the new evangel. The *British Medical Journal* which had always supported Lister writes "of that great principle in surgery, which had been accepted almost everywhere else before it was listened to in London."

But if students and London surgeons were apathetic over the revolution in surgery being wrought in their very midst, it was not so with the foreigners. When I was house surgeon with Lister, 44 years ago, there was in the entrance hall of the old hospital a painted notice board forbidding smoking in English, French, and German. It ran thus:—

> "Smoking is forbidden.
> Il est defendu de fumer.
> Das Rauchen ist verboten."

In 1883 foreigners poured into King's College Hospital, from the ends of the earth crowded the entrance hall and there while waiting for the master, they would make the air thick with tobacco smoke. In later years when Lister's evangel had gone forth over all the earth, and he was neglected by both students and visitors many must have wondered at the need of this polyglot announcement. It survived as a memento of the few early years in London when the prophet was still without honour in his own country, but was attracting from overseas the seekers after truth. Already in 1875, two years before coming to London Lister, during a prolonged tour in Germany, was received everywhere with enthusiasm. In the words of THE LANCET, "the progress of Prof. Lister has assumed the character of a triumphal march" (June 19th, 1875). In 1879 Lister's appearances at the International Congress of Medicine at Amsterdam were greeted with "an enthusiasm which knew no bounds."[3]

At the next International Congress in London in 1881 foreign surgeons must have marvelled amongst themselves when they heard British surgeons still attempting to cast doubts on his principles or belittle his results. But let us in parenthesis project our attention forward to the following International Congress in London. It was in 1913. Lister had died the previous year, but the light of his good work was shining before all men. As is well known, congresses and such like events are often commemorated by the issue of a medal. The medal of 1881 when Lister's work was slighted and belittled by his own countrymen bore the features of Queen Victoria. But in 1913 it was felt in Britain that the one effigy worthy of being stamped on the medal of an International Congress in London was the head of Joseph Lister.

My audience will hardly believe me when I tell them that in my student days the surgeon of one of the largest teaching hospitals—a Fellow of the Royal Society, and a President of the Royal College of Surgeons—frequently raised an appreciative laugh by telling any one who came into his operating theatre to shut the door quickly, in case one of Mr. Lister's microbes should come in.

The first case in which Lister wired a fractured patella was in 1877. When I was his house surgeon I had the honour of bringing together and exhibiting six of the seven first cases which he showed before the Medical Society of London on Oct. 29th, 1883.[4] Some of them were recent cases and others were old, ununited fractures. All were successful. I well remember the astonishment with which Fellows of the Society tried to feel the buried silver wire: but others were aghast at the unwarrantable danger incurred in opening a healthy knee-joint and so running the risk of ankylosis or of amputation or even death. One hospital surgeon, Morrant Baker, asked, "Had not anchylosis, amputation, and death been heard of after its performance?" Another said that if the next case died, Lister should be prosecuted for malpraxis, while a third exclaimed: "C'est magnifique mais ce n'est pas la chirurgie." This bon mot helped, in subsequent years to lessen the reputation of its brilliant author. In those days the peritoneal cavity the pleura, and the synovial cavity of any joint were all sacrosanct spaces and were rarely invaded by the surgeon. Ovariotomy results at King's College Hospital had been so disastrous that the governors had forbidden the staff to undertake it.

Although Lister was carrying out operations never before attempted in the history of surgery, it is interesting to record that I never saw him do an abdominal section. During my term of office we never heard the word "appendicitis": gastric ulcers were diagnosed but never treated surgically; ovarian cysts were tapped and tapped until the patient died; that a calculus could be removed from a ureter or a bile-duct never entered the imagination of the wildest dreamer.

In those early years of Lister's advent a little personal recollection will illustrate how slowly his gospel spread, yet how courageously confident the master was of his mission. One day, in 1883, after he had been six years in London, I was standing beside him on the steps of the hospital waiting (as is the way with deferential house surgeons) for his carriage to pull up. We had been discussing the attack made on him for having the temerity to open a healthy knee-joint. He began by quietly remarking that the day must surely come when the profession would accept the principles of his methods, "and," he added warmly, "if the profession does not recognise them the public will learn of them and the law will insist on them." Then, placing his hand on my shoulder he added pathetically, "Thomson, I do not expect to live to see that day but you may."

Shortly afterwards I went abroad and spent some years on the Continent. To state that I had been Lister's house surgeon served as a *laissez-passer* to make me welcome in any foreign hospital I visited. Everywhere I found Listerian principles had been embraced and his methods pursued with brilliant success. When I settled again in London in 1893 I found the whole surgical atmosphere had changed during my ten years absence. Younger surgeons more open to conviction and less wedded to old routine, had come along and late converts concealed their overdue repentance by rapturously embracing asepsis, and vaunting its superiority over the "antiseptic system" as it was still called. Soon after my return in 1897 the year of Queen Victoria's second jubilee, Lister was made a peer on New Year's Day, his peerage having been the first ever conferred upon a surgeon. In a picture of his coat-of-arms you will notice that the serpent of Æsculapius, for the first time in history, appears in the quarterings of a peer of the realm.

In the following May an address and dinner were offered to him by 30 old house surgeons and 100 dressers. As secretary of that festival I had to make a little speech and took the opportunity of reminding the chief of his words to me on the steps of the hospital 14 years previously, and I pointed out that he had not been imprisoned like Galileo nor burnt at the stake like Giordano Bruno nor crucified like other pioneers of truth, but that he as well as I had lived to see the day when his principles were universally accepted. Then drawing from my pocket a newspaper of that very day, I called attention to the fact that,

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[3] Brit. Med. Jour., 1879, ii, 453.

[4] Proc. Med. Soc., Lond., 1884, vii, 8.

that a prophet was not without honour except in his own country. His first function was the introductory address of the session on Monday, Oct. 1st, 1877—50 years ago—the first medical lecture I ever attended. The lecture theatre was crowded, and he had a cordial reception from former pupils, distinguished men of science, and many surgeons. But Lister, to most people's astonishment, opened his address by stating that he was going to record some experiments he had made "to obtain some positive and definite knowledge of the essential nature of a class of phenomena which interests alike the physician, the surgeon, and the accoucheur—viz., the changes in organic substance which are designated by the general term fermentation."[2] This address, I well remember, was delivered from behind a table covered with the paraphernalia required to demonstrate Lister's contention that neither milk nor blood have any inherent tendency to putrefaction, and that if either of these fluids was drawn and preserved under what we should nowadays call "sterile conditions," it remained free from putrefaction indefinitely. This, which is all at the present day accepted doctrine, as

'Most can raise the flowers now,
For all have got the seed."
—*Tennyson*

was not so 50 years ago.

When Lister came to London bacteriology as a science was non-existent; the connexion of fermentation and putrefaction with the healing of wounds was unknown or scouted or even ridiculed. If a wound healed by "first intention" it was looked on as an exception, and the rule was that suppuration was Nature's usual process of repair and that pus might even be, as it was termed in those days, "laudable." Anyhow, this first lecture was looked on as a bad start, and altogether unsuitable, for it was generally agreed that such an abstract subject as lactic acid fermentation was no concern of a surgeon. This first plunge in the lecture theatre of King's College was certainly chilly, but it was at the hospital that Lister encountered his full sea of troubles. He had stipulated that he should be allowed to bring with him from Edinburgh four assistants already trained in his methods, and attached solely to his service. This was a cause of offence, because in those days operations were so few that one house surgeon and one operating theatre were sufficient for all the surgeons on the staff.

Of the four who accompanied Lister from Edinburgh to London, one, Dr. James Altham, of Penrith, is dead. Of the surviving three, one is Dr. W. H. Dobie, who has long held a high position in Chester. The two others are with us this evening. One a Highlander in blood and type is Dr. John Stewart, of Halifax, in Nova Scotia. He is one of the most affectionate pupils of the master, whom he has drawn in many letters and pen pictures. The fourth had been Lister's last house surgeon in Edinburgh, and was his first in London. He is with us this evening. He is known to us all as Sir William Watson Cheyne, who succeeded his master as professor in King's College Hospital, became President of the Royal College of Surgeons, served his country on land in the Boer war and at sea in the Great War, reached the rank of Admiral, sat in the House of Commons as Member of Parliament, and is now Lord Lieutenant of Orkney and Shetland. But perhaps his greatest work, and the one I imagine he looks back on with the keenest satisfaction, is his long and loyal service, in hospital and in private work, with the Messiah of surgery, whom he served so faithfully as an apostle to the Gentiles.

The peace-loving Quaker spirit of Lister was also much distressed by the opposition he met with at the hospital from the nursing sisters of St. John. At that date the hospital authorities farmed out, so to speak, their nursing to an Anglican community much given to ritual, frigid rules, repressive formality, and petty restrictions. In the days of Sir William Fergusson the teaching was entirely in the wards; he passed from bed to bed, followed by a sister with a towel and a basin of water, in which he dipped his hands after examining a patient. Lister upset the pious sisters by copious ablutions and the purification of many pairs of hands before a patient was touched and many of his cases were carried or wheeled into the theatre as subjects for clinical lectures. These sisters of St. John were opposed to Lister and all his ways, and dealt him those pious and smiling stabs in which women, particularly good women, are so skilful. Patient, courteous, self-controlled, Lister exhibited no resentment, never retaliated and only showed how he felt it by the little gasping sigh we all learned to know and to respect as his only sign of sorrow or annoyance.

Worse than these two gales in his sea of trouble was what John Stewart describes as the "colossal apathy," the "monstrous inertia to the force of new ideas," the inconceivable indifference shown by the students and surgeons of London. Fifty years ago the wards of most of the hospitals in England reeked with the stench of putrefaction, just as they had done for centuries. But Lister's wards were free from what was everywhere *accepted as the recognised* "hospital smell"; his dressings when taken off were free from pus and fœtor; they were handed round for confirmation, and I well remember the surprised and approving sniff with which the visitor—generally a foreigner—confirmed Lister's frequent and pleased remark: "You will notice, gentlemen that any discharge is only serous and is quite sweet." Yet Londoners did not come to see his epoch making change, to hear, to smell, and to be converted.

In Edinburgh Lister's class frequently numbered 400 students; in London, some 10 or 20 might turn up, but these gradually fell off. Ten years after his arrival Lister referred to his small classes at King's, after his crowded audiences at Edinburgh, as "a humiliating experience." To-day, after 50 years, with new conditions and changed mentalities, it is perhaps superfluous as well as somewhat difficult to explain this neglect. I think the faulty method of teaching and examination had much to do with it. Lister's teaching did not help a man very much to pass an examination and secure a diploma. He was therefore neglected by the average student, while he cast a lifelong spell over those who, as dresser or house surgeon, came under the potent power of his personality.

It is more difficult to suggest the reasons why London surgeons neglected or belittled his work. One was that the discoveries of Pasteur, on which Lister's conceptions of wound infection were based, were too recent, and too little known to be understood as the basis of his principles. Bacteriology had hardly come into existence 50 years ago. Another possible reason was that Lister had, by way of experiment, to try many things in his application of these principles to wound dressing. In these efforts he moved from carbolic lotion to boric, or made trials of corrosive sublimate, and then reverted to carbolic. Or he saturated his gauze with carbolic or iodoform or eucalyptus, or double cyanide of mercury. These frequent changes were all causes for stumbling to the average individual who had not grasped the first principles, and was therefore doubtful of a so-called "system" which was not definite or final (later in history these frequent modifications were counted to Lister for righteousness, for they demonstrated that it was the principle which mattered and not the methods of technique). Another reason was that the surgeons of the latter Victorian period, just like Astley Cooper, Abernethy, and John Hunter, were all in the dark as to how wounds became unhealthy. The generally accepted view was that the air or some "miasm" in it was at the root of the mischief. Surgeons without Lister's scientific training and Pasteurian knowledge looked upon his methods as but another variant of many previous empiric and hopeless efforts. Lister himself realised this, for in one of his addresses he said: "I venture to assert that no one who has not a belief in the germ theory of putrefaction can

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[2] Brit. Med. Jour., 1877, ii, 465.

German, and in both of these languages I have often heard him speak fluently, easily, and without preparation He was devoted to walking and excursions He was interested in botany and bird life; and he could always fall back on a pocket edition of Horace, Dante or Goethe

Lister's hand was large and neither graceful nor delicate looking, yet he was very neat with his short thick fingers, as is proved by his plastic and soft palate operations, and by the fact that in early days he performed ophthalmic operations We are fortunate in possessing a skiagram of his hand, one of the earliest records of the X ray It does not tell us much, the strength, delicacy, and skill of a hand resides chiefly in the controlling brain He was a steady, firm, and deliberate operator With the least exertion he perspired freely, and it was always one nurse's duty to stand behind him ready armed with a clean towel to which he frequently turned during an operation to mop his streaming forehead

It is interesting to visit the surgical block of the great hospital in Rome the "Policlinico Umberto I" The bas relief in the tympanum over the main entrance shows Lister operating, and wearing a white gown Now, Lister never wore a white gown, nor a mask, nor gloves He frequently never removed his coat, but simply rolled his sleeves back, and turned his coat collar up, so that his white starched collar would not be made sodden by the cloud of carbolic spray in which we operated Sometimes he removed his black frock coat and an ordinary towel was pinned across his chest I myself, for operations, put on an old blue frock coat which I had worn for years previously in the dissecting-room It was stiff and glazed with dry blood Yet our cases, as I remember them, healed as rapidly and as smoothly as they do with all the ceremonial and ritual of sterilisation and asepsis nowadays The operating table served for all cases—sterile or suppurating The floor, also of wood, was made of ordinary deal planks The instruments, which had been carefully washed after they had been last used, were soaked for an hour in 5 per cent carbolic lotion before use; the site of operation had been purified by a wet 1 in 40 carbolic dressing, applied for 12 to 24 hours before operation, the neighbourhood of the operation was cut off by ordinary towels wrung out of warm 1 in 20 carbolic lotion, during the operation any suspicion of "contamination" (as we called it) of hand, instrument, or wound, was corrected by sluicing them with the 1 in 40 carbolic lotion and the whole performance was carried out in clouds of watery carbolic steam which poured over the field of operation from one or two spray machines Lister called the spray an unconscious caretaker It seems to me that the admirable results he obtained—wonderful in the days of 50 years ago and equal to anything done to-day—must, in spite of the surrounding drawbacks I have mentioned, have been largely due to the scrupulous care with which the wound, the instruments and our hands were kept free of "contamination" and the promptitude with which any suspicion of chance contamination was dealt with (One wonders if Lister's principles and teaching were as religiously carried out nowadays whether much of the ceremonial ritual would be necessary, and whether a great deal of the costly construction of hospitals and operating theatres would not be superfluous) On leaving King's College Hospital I became resident medical officer at Queen Charlotte's I was there told that my period of office was the first in the memory of man without a death from puerperal fever For many years I was followed by a succession of residents, all selected from King's men, so that they could continue the antiseptic methods I had introduced there

Lister, this genius, this pioneer, created anew the ancient art of healing He did more for surgery and mankind in his lifetime than all the surgeons of all the ages had effected since the days of Hippocrates I venture to say that, as an instrument in God's hands, Lister has wrought more for the relief of bodily suffering, for the security of life, for the prevention of anxiety, for the conversion of sorrow into joy, for the promotion of happiness, and for the enrichment of mankind than any man who has ever trod this earth The history of our world is divided into two periods, before and since the coming of Christ, B C and A D The history of medicine and surgery and of bodily suffering will always be divided into the times before and after Lister He was our countryman, and the greatest of the masters of surgery, we have lived through the golden age when he evolved this miracle of healing which had waited for centuries for his coming, and now can be wrought by every surgeon in every country in the world Any house surgeon, any newly qualified doctor, can to-day remove pain, arrest disease, and save life by perfectly safe operations which no man knew of, or, knowing, dare not adventure when Lister came to London 50 years ago

Those who chanced to come near this great master caught glimpses of such a spirit as is seldom revealed to us We are fortunate in possessing a perfect portrait of him in imperishable verse, written by W E Henley, who at one time was his patient in the Edinburgh Infirmary

> "His brow spreads large and placid, and his eye
> Is deep and bright, with steady looks that still
> Soft hues of tranquil thought his face fulfil—
> His face at once benign and proud and shy
> If envy scout, if ignorance deny
> His faultless patience, his unyielding will,
> Beautiful gentleness and splendid skill
> Innumerable gratitudes reply
> His wise, rare smile is sweet with certainties
> And seems in all his patients to compel
> Such love and faith as failure cannot quell"

Lister was born a Quaker, but he lived most of his life and died a member of the Church of England. He was blessed with a loving and devoted wife She was the daughter of Prof. Syme, whom he had served as house surgeon in Edinburgh, and she appeared to have no thought or interest beyond her husband She not only loved and shielded him in every way, but entered intelligently into all his work and researches; helped him in his studies; worked in his laboratory; wrote his letters, and always when I arrived at his house in the early morning to go with him to a private operation I would find Mrs Lister preparing and checking off his instruments In their pleasures as in their work they were united They were inseparable companions on all his holidays, and in the numerous Continental trips he loved to make It was while on one of these in Italy that his wife died, after a brief illness in 1893. They had no children, and after her death Lister was a lonely man He lies buried beside her in West Hampstead Cemetery

As illustration of his noble spirit I will give a few sentences from two of his addresses. As a young professor of 33 he told the Glasgow students in his Inaugural Lecture in 1860 that the two great requisites for the medical profession were—"first, a warm loving heart, and secondly, truth in an earnest spirit" Eighteen years later, in a graduation address to newly qualified students, he said: "If we had nothing but pecuniary rewards and worldly honours to look to, our profession would not be one to be desired But in its practice you will find it to be attended with peculiar privileges, second to none in intense interest and pure pleasure It is our proud office to tend the fleshly tabernacle of the immortal spirit, and our path, if rightly followed, will be guided by unfettered truth and love unfeigned In the pursuit of this noble and holy calling I wish you all Godspeed"

In the north transept of Westminster Abbey, as we all can see on Wednesday morning, there is a marble medallion of Lister's bust, placed near to those of the great scientists, Darwin, Stokes, Anderson, and Watt At the public funeral service in the Abbey on Feb 16th, 1912, there was sung an anthem of Handel's to words so peculiarly applicable to our dear master that I cannot better conclude than by quoting them: "When the ear heard him, then it blessed him, and when the eye saw him, it gave witness of him, he delivered the poor that cried, the fatherless, and him that had none to help him.

anyhow, the other part of his prognostication had been fulfilled, for this newspaper recorded that a midwife in Germany had been sent to prison for manslaughter, as she had attended a confinement without providing herself with a proper antiseptic outfit. These intervening years had seen the completion of his mission since he left Edinburgh in 1877, —20 years previously—to take that cold plunge into a sea of troubles. His task was done, and there is little to record of the dwindling years.

In 1892 Pasteur's jubilee was celebrated. Lister was the predominant personality amongst all who came to honour the great French scientist. This event is recorded in a most striking picture, which not only suggests the one-sided feebleness of the semi-paretic Pasteur, leaning on the arm of Carnot (the President of the Republic) but, in a marvellous manner, the artist, Rixens, gives a most life-like representation of Lister's features, his figure, and even of his hands, gestures, and gait. Lister had retired from the active staff of King's College Hospital in 1893 at the age of 66. He was President of the Royal Society from 1895-1900. In 1903, for the first time, his stalwart frame was shaken by a threatening of the infirmities of age. The Continental journeyings he had enjoyed so frequently and so thoroughly were abandoned. His last years were saddened by slowly failing health, and on Feb. 10th, 1912, in his 85th year, he died peacefully at the little fishing village of Walmer, looking out on the English Channel.

What was the personality of this master of surgery? He was tall, upright, well knit, stoutly built, deep chested; his bearing was dignified, and his manner always serious, restrained, courteous, and considerate. He had a profusion of thick iron-grey hair, worn somewhat long, as had been the fashion in his youth. Except for small side-whiskers, he was clean-shaven. I never saw him in any other pattern of collar or necktie than those seen in all his portraits, a black silk bow tie and an upright collar with the peaks turned down over it. His costume never varied; he always wore a frock coat made of the shiny black material called broadcloth, and nowadays only seen on undertakers and country hotel waiters.

His voice was low and musical; there was little resonance or ring, and it had a rather attractive hollowness about it—what, as a laryngologist, I would call a voice of some "phonative waste," due to want of tension in his vocal cords. This tone—or want of tone—in his voice may have been connected with an occasional slight stammer. This trifling hesitation in his speech had persisted from childhood. It was very transitory and never embarrassing. Some thought that the extra effort and emphasis required in overcoming its occasional occurrence added a little charm to his speech, but he himself was very conscious of it, and referred to it as "a severe thorn in the flesh."

His manner was generally serious, but relieved by what Dr. John Stewart calls his "gentle manner and somewhat pensive smile." His manner had a certain aloofness about it. His lifelong disciple, Watson Cheyne, confesses that Lister always inspired him with a certain sense of awe. I myself always felt that his soul was "like a star and dwelt apart," and that, as Wordsworth said of Sir Isaac Newton, his face showed—

> "The marble index of a mind for ever
> Voyaging through strange seas of thought, alone."

Yet he commanded not only veneration, respect, and admiration, but a feeling of complete trust and devotion which could only be explained by the nobility and sincerity of his character.

After a separation of 34 years, his former pupil and house surgeon, John Stewart, could write: "It is beyond my power to express the feelings of reverence and love I have for Lord Lister, or to say how much his life has been to me." For my own part I can only say that no teacher, no friend, no man I have ever known has left his impress on me as Lister has done. To none of them do I feel the debt I owe to him, for the example of his veracity of thought and word, his patience under persecution, his constancy in the pursuit of truth, his eagerness to instruct his pupils, his long-suffering with stupidity, his tenderness to the poor and his gentleness to the sick and maimed. He was imbued, I need hardly say, with a truly scientific spirit. His studies in physiology and pathology and their bearing to clinical surgery will be referred to in addresses by experts during this centennial week. He urged the necessity of experimental and laboratory research. In 1875 Queen Victoria, to whom only one side of the question had been presented, wrote requesting him to take action for the suppression of vivisection. Although he held a court appointment he had the courage to decline an invitation he could not conscientiously accept. He wrote to her private secretary as follows: "I should deeply regret that I cannot see my way to comply with this request, were I not persuaded that my doing so would not promote the real good of the community, which I know to be Her Majesty's only object in the matter."

In the same way, although he used all the cases in his service very freely for class demonstration and instruction, his patients never resented it—were even proud of it—for he never neglected to let them feel that they were regarded as fellow human beings as well as so-called "clinical material." One of his sayings was, "The individual patient asks to be relieved and not to be studied," which reminds us of the great saying of a Frenchman: "L'amour de la médecine fait le savant, l'amour du malade fait le médecin." To demonstrate his consideration and kindness to everyone, I will throw on the screen a facsimile of a letter written by Lister to the house surgeon who preceded me, the late Dr. R. G. Lynam, of Oxford. It will be noticed that the letter is entirely concerned with the interests of his students and a hospital patient, for whom he shows a touching consideration. He sent the letter to the hospital by special messenger, there being no telephone in those days. Typewriting machines were also in their infancy, and you might think that this written letter had all been penned by Lister, so similar is the signature of the body of the text. As a matter of fact it was like most of his letters, written by his wife, and only signed by him. Here is another instance of his singlemindedness and honesty. Like all great men he was keen on the importance of small details. In showing us how to bandage a breast he insisted on the point that, in spite of various turns, the bandage was almost sure to slip and allow a dressing to be displaced if the transverse turns of the bandage, above and below the prominence of the mamma, were not prevented from slipping up and down by uniting them with a safety pin, which securely prevented them from drifting apart. To impress this point upon us he narrated that he had once had to open a simple abscess in the axilla for Queen Victoria. All went well. After one dressing and on arrival at the railway station to travel back to Edinburgh, he suddenly remembered that he had forgotten the important safety pin. He at once drove back to the Castle, and explained his oversight to Her Majesty, and the necessity for rectifying it. Some surgeons, I fear, would have thought first of their own reputation, and would have "risked" the safety pin.

He felt checks and disasters very keenly at the time, but a certain buoyancy soon restored his equanimity and forward-looking temperament. He himself writes this when on a holiday: "I have the happy faculty of being able to throw off all thoughts of work for the time being." He fished, but as his biographer remarks, he was a diligent amateur but never an expert. He skated and could do 8's and 3's—but of small dimensions. He took a fair share of vacation, and on his holidays could be light-hearted and boyish. But complete idleness was not congenial to him; on his holidays there were usually proofs to correct, or addresses to prepare. On the Continent he practised and improved his very good French and at Hampstead by the side of his wife after a most impressive service in Westminster Abbey Like Pasteur, and more fortunate than many reformers and pioneers Lister lived to see his work bear fruit exceedingly, and died full of years and loaded with honours from all countries but it is as the greatest material benefactor of the human race, who made surgery safe and thereby did more than any other man to prevent suffering and save life that we regard him with deep gratitude and thankfulness

THE CONQUEST OF SEPSIS[1]

BY SIR JOHN BLAND-SUTTON, BART,

LATE PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

CENTENARIES remind us of our predecessors and reawaken our memories to the benefits we derive from their discoveries The discovery of the anæsthetic properties of ether and chloroform 80 years ago is a landmark in the history of surgery, and it is common knowledge that 20 years later surgical operations increased enormously in number in all big cities and postoperative sepsis became so common and so mortal as to threaten the extinction of operative surgery as an art Endeavours to ascertain the cause of sepsis exercised the minds of the greatest surgeons

The principles underlying the treatment of wounds were based on the idea that festering was due to something which entered wounds, and the time-honoured methods adopted in treatment consisted in removing any foreign body that might be in the wound to staunch the bleeding usually with the aid of styptics, then close the wound and allow it to heal The styptic might contain something to stimulate the healing process This method of treating wounds can be traced back 3000 years it was practised by famous physicians in the Trojan war

All who are acquainted with Virgil's Æneid can recall this stirring story When the hero Æneas was wounded in the thigh with a dart, the celebrated Trojan physician Iapyx *came to aid him After some* trouble the head of the dart was extracted and Iapyx instilled into the wound a tincture to which the goddess Venus added unknown to the physician, some juice prepared from the stalk, leaves and flowers of dittany from Crete Suddenly all pain fled from the wound and all the blood in the deep wound was staunched Æneas soon recovered his vigour and urged by Iapyx, returned with zest to the fight

In 1866 a patient was admitted into the Glasgow Royal Infirmary with a compound fracture of the leg and had the good luck to come under the care of Joseph Lister the professor of surgery who treated the fracture on the same principles as Iapyx treated Æneas but instead of a tincture containing dittany he instilled into the wound a solution of crude carbolic acid There was nothing poetical in this, but the result exceeded Lister's expectation for the patient recovered with a useful limb The usual treatment at that time was amputation and even in such an event the patient usually died from sepsis The successful issue in this case was of the utmost importance for it laid the foundation of the glorious edifice of Antiseptic Surgery

The treatment adopted by Lister in this instance was no sudden inspiration When he served as Syme's assistant surgeon in Edinburgh in 1856, postoperative sepsis was endemic in every infirmary and hospital in the British Isles Lister attributed sepsis to something which entered wounds He believed that putrefaction was caused by the oxygen of the air, chemists believed this Lister thought that sepsis could be communicated to wounds by instruments, sponges and the fingers of surgeons and attendants He devised means for preventing infection and selected carbolic acid at that date called creosote, a chemical novelty used for deodorising sewage, for the purpose of destroying the agents of sepsis, and he adopted the word Antisepsis for his method Whilst Lister was busy with these investigations Cohn made the important discovery that yeast was a microscopic plant Pasteur discovered that fermentation and putrefaction were due to the action of microbes Lister welcomed Pasteur's demonstration "that putrefaction like other true fermentations is caused by microbes growing in the putrescible substance" These brilliant discoveries proved that the apparently dissimilar processes—fermentation, putrefaction, suppuration and sepsis—are due to the action of minute living organisms

Pasteur's discovery revolutionised the methods of the winepress, brewery, dairy, and sewage farm, Lister's transformed the methods of operative surgery, and they are by *no means* limited to mere wound treatment, they have led to extraordinary changes in surgeons, hospitals, and lying-in chambers All great changes introduced into an ancient craft stir up opposition and ridicule Some cautious surgeons who laughed at antisepsis endeavoured to follow the method Others who jibed went slowly, but surely, to the wall

In the face of opposition Lister pursued his course apparently unruffled The younger surgeons—enthusiastic converts—adopted his principles and gradually introduced the methods of the bacteriological laboratory sterilisation by heat This ultimately became the Cult of Asepsis Indeed, heat is the most perfect antiseptic known Odoriferous carbolic acid persists as a memory!

Since 1900 operative surgery has advanced with such strides that text-books of surgery have become like railway time-tables, useful only for a season Surgical methods change monthly Operating theatres which resembled shambles in 1860 are replaced by rooms of spotless purity containing scintillating metal furniture and ingenious electric lights All concerned in the operation are clothed from nose-tip to toe-tip in sterilised linen garments, and their hands covered with sterilised rubber gloves The patient is in a sleep as deep as that of Adam in Eden, and the theatrical silence is only broken by the rhythmical breathing of the patient or an occasional utterance from a nervous operator Modern surgery is wonderful I was trained in the old school and lived to revel in the wonders of the new But this is not the end, the legitimate function of surgery is the repair of physical injuries We must strive to cure morbid growths with drugs prepared by biochemists We may believe that chemotherapy and physics which have furnished surgeons with powerful and reliable remedies, will help to deliver mankind from some of the most distressing and unpromising operations of modern surgery.

There are clear signs of the dawn of such an era The dominating features of Lister's life were his persistent enthusiasm and faith for the cause he had at heart; and his courage in the face of the incredulity of contemporary surgeons is beyond all praise The propagation of a New Gospel in religion science or art demands forceful disciples If Lister had had an apostle with the zeal of Saul of Tarsus or a disciple with the eloquence of Huxley the Listerian principles of wound treatment would have been universally accepted before 1900 In spite of this Lord Lister had the rare privilege of living to see his principles adopted by surgeons throughout the world

The bronze figure of Lord Lister in Kelvingrove Park exemplifies his steadfastness in the pursuit of Truth, the granite block which supports it is typical of the firm foundation on which his discovery rests The monument is an expressive tribute to the great surgeon whose influence will remain as long as surgery is practised as an art and the conquest of sepsis will continue to be a blessing on every race of mankind

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[1] Address delivered at the Lister Centenary Celebrations in Glasgow

Kindness, meekness and comfort were on his tongue. If there was any virtue and if there was any praise, he thought on those things. His body is buried in peace, but his name liveth for evermore."

A DOMESTIC SURVEY [1]

By Sir HUMPHRY ROLLESTON, Bart.,

LATE PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON

We are here to commemorate the centenary of one of the greatest benefactors of mankind, Joseph Lister, born on April 5th, 1827, at Upton House at Upton in Essex, then hardly even a village, now swallowed up in this great city and in the Borough of West Ham which has the honour of having had him as a Freeman.

He was the fourth child and second son of Joseph Jackson Lister (1786–1869), who had a world-wide reputation for his discoveries in optics and the perfecting of the modern microscope by achromatic lenses, thus becoming a Fellow of the Royal Society of which his son was destined to be President. Arthur (1830–1908), another son of Joseph Jackson Lister, was also a Fellow of the Royal Society and distinguished for microscopical research, writing with his daughter Gulielma a monograph on the Mycetozoa; one of his sons, the late Joseph Jackson, was also a Fellow of the Royal Society, and another, Sir William Tindall, is ophthalmic surgeon to the adjacent London Hospital. The Becks, connexions of the Lister family, were well known as opticians. The late Sir Rickman Godlee (1849–1925) who wrote the life of his uncle Lord Lister, was President of the Royal College of Surgeons of England. The scientific record of the Lister family is therefore remarkable.

The Listers belonged to the Society of Friends, founded by George Fox in 1643 who in 1650 admonished Justice Bennet of Derby and those present to quake at the name of the Lord, hence their alternative title. Being debarred by their religious tenets from the older universities, from taking holy orders, and joining the fighting forces, and by cutting themselves off from vain sports and places of diversion, such as hunting theatres, and music, the Friends were much given to education and to the study of science and natural history. Thus a relatively large number of them became Fellows of the Royal Society. The Quaker atmosphere of quiet goodness, which originated so many of the philanthropic movements of the nineteenth century, and the study of nature admirably fit the members of the Society of Friends to minister to the sick and there have been many famous medical men among them. The greatest man of genius who ever entered the medical profession was Thomas Young (1773–1829), "alike eminent in every department of human learning," who foresaw X rays and electrons, was, like Lister's father, a pioneer in optics; and, like Lister again shed the external observances of the Society of Friends when working in Edinburgh. Among other well-known Quaker medical men were Thomas (Baron) Dimsdale, who, in 1768, successfully inoculated Catharine Empress of Russia against small-pox; John Fothergill, whose country seat with its wonderful gardens was Ham House close to Upton House, Thomas Hodgkin (1798–1866) who described what is now known as "Hodgkin's disease," and founded the Aborigines Protection Society, and more recently Sir Jonathan Hutchinson of the London Hospital, a contemporary of Lord Lister's. None of the Lister family, except a distant cousin had been a doctor, but when a child Joseph Lister had decided for himself that he would be a surgeon, and this desire strengthened with his age; his father though not encouraging this ambition, wisely left his son to work out his own salvation, and as it resulted that of his fellow men.

Joseph Lister was educated at Quaker private schools at Hitchin and Grove House, Tottenham, and in 1844 entered University College, London, which is this year celebrating its centenary. Here he worked for nine years, being a spectator of Robert Liston's first operation under a general anæsthetic in 1846, and having many opportunities of watching the ravages of erysipelas, blood poisoning, and hospital gangrene, then the unavoidable accidents of surgery. In 1853 he went to Edinburgh, originally for a short visit, but remained for seven years, marrying in 1856 Agnes, daughter of James Syme, whom he was destined to succeed in the professorial chair.

The two great events in the history of surgery are the introduction in 1846 of anæsthetics, which made surgery possible, and has been called "the death of pain," and the discovery of the antiseptic and aseptic method dating from 1867, which has made surgery safe for humanity and may in like manner be termed "the death of infection." In 1865, which may therefore be called the birth year of the antiseptic method, Lister began the campaign to prevent germs in the air from getting into wounds and so, by the resulting blood poisoning, rendering operations a most perilous form of treatment. Lister had long been thinking and preparing how to obviate the risks of the diseases which attacked patients after operations, but the discovery in 1865 that germs of micro-organisms caused putrefaction was made by the great Louis Pasteur, who was a chemist not a medical man, really showed him the way. Most surgeons if they heard of Pasteur's researches would have been mildly interested in them, but Lister was able to grasp their significance and henceforth devoted his life to applying this principle to the prevention of post-operative infection. His brilliant imagination, philosophic insight, untiring industry, and unflinching courage overcame the antagonism, not to mention ridicule, that his life-saving work provoked and he finished his task. In 1867, just 60 years ago, Lister published his first papers on antiseptic surgery, and from that time he continued by most careful and indomitable research to improve the methods.

It is almost impossible to describe the world-wide transformation of surgery which was brought about by Lister's work. The history of surgery has indeed been divided into two periods, that before and that after Lister's methods became adopted; before his discovery as few operations as possible were done because of the risk that they would be followed by erysipelas, blood poisoning, pyæmia, hospital gangrene, tetanus and death; abdominal operations, such as are so constantly done now for appendicitis, were practically unknown; to open a large abscess was almost certainly to sign the patient's death warrant. Hospitals indeed were spoken of as "houses of death."

Lister, who was professor of surgery in Glasgow from 1860 to 1869, became professor of clinical surgery in Edinburgh in succession to his father-in-law James Syme, and there continued to practise, preach, and perfect the doctrine of antiseptic surgery. Like most great advances and reforms, this life-saving discovery met with much opposition and criticism, and in order to overcome these adverse influences and to spread the knowledge of the correct method of carrying out the antiseptic treatment, he accepted in 1877, when 50 years old, an invitation to be professor of clinical surgery in King's College, London, for be it said, with regret, his native city was the stronghold of antagonism. His London life falls into two almost equal periods; from 1877 to 1893 he was a busy hospital surgeon gradually convincing all of the inestimable value of the antiseptic methods; in 1893 his retirement from the hospital, on account of age and the sudden death of his devoted wife, leaving him a childless widower at the age of 66, entirely altered his life. Henceforth, with rare nobility of character he devoted himself to public duties; he became President of the Royal Society in 1895 in succession to Lord Kelvin, and President of the British Association in 1896, giving his address on "The Interdependence of Science and the Healing Art." He died on Feb. 10th, 1912, at Walmer, and was buried wrong with an operation the surgeon did not blame this or that material he had used, or any of his helpers; he asked himself what he had himself left undone.

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[1] Address delivered at Lister's Birthplace, Upton, on April 5th.

Sir Watson Cheyne continued: "It is just 50 years ago since Lister received an urgent invitation from the authorities of King's College Hospital then situated in the vicinity of Lincoln's Inn-fields asking him to go to London to fill the place in that hospital which had become vacant by the death of Sir William Fergusson in the preceding year. This request came as a thunderbolt to Lister. He had settled down in Edinburgh and was supremely happy in his life there. He had many friends who loved and admired him, not only for his ability but also for his gentleness and sympathy with suffering and readiness to help. His wife was a native of Edinburgh and had all her friends and relatives there. He had very large classes of enthusiastic students and it was a great joy for him to teach them; his students loved and worshipped him and they were violently opposed to the attempt to get Lister to leave Edinburgh. At first Lister declined the proposal, but renewed requests of the most urgent nature made him ultimately agree to go to London, being chiefly influenced by the argument that his views and methods of treatment would spread more quickly from the metropolis than from Edinburgh, and by the fact that although something like 11 years had elapsed since his first publications there were really very few surgeons in London who had taken up his methods, and that these methods were opposed and derided by many men of great ability. Comfort and happiness were for him matters of little consequence as compared with the rapid adoption of his teaching by surgeons in general.

"I remember well this time 50 years ago, for only a day or two after Lister had received the invitation, and before he made his vital decision, he came down to the Edinburgh Infirmary early one morning and woke me up (I was his house surgeon at the time) to ask whether, if he decided to go to London, I would go also and again act as house surgeon so as to start the treatment at King's and to teach the students; you can well understand that I was considerably excited at the prospect of migrating to London. Three other students were also asked to go as clerk and dressers—viz., Stewart, Dobie, and Altham—and they were equally excited and pleased at their selection to follow the master. You can well believe that we looked on our selection as an unexpected and unbelievable honour. No question of self had play, either in the chief's mind or in ours. We all felt as the old Crusaders must have felt and our only aim was to do our part of the work as carefully as we could so as to show those who were lagging behind how true was every claim made for Lister's methods.

"Whether Lister was right or not in accepting the London invitation is a very debatable point. Possibly his views did penetrate more quickly than from Edinburgh, but Lister missed the large number of students who followed him and filled the large lecture room in Edinburgh, and at times when the students at King's College (then quite a small school) who came to the lectures were few, or looked bored, he was very pessimistic. It is well known to all lecturers how much better a lecture is if there is a large and enthusiastic audience rather than a scanty and, apparently, unappreciative one. For some years I attended his lectures whenever I could manage to go, as I knew how much the presence of senior men pleased and comforted him. I thought for a considerable time that we had struck a poor type of student, and was very unhappy about it, but I found later on that the examining bodies did not favour "Listerism" and that the students were afraid to introduce the subject and hence did not want to learn his views till after they had passed their examinations. However, a good many men who were able to do so took an extra course or stayed behind after passing the examinations so as to see Lister's practice.

"I think one of the greatest, if not *the* greatest, characteristics of Lister was this extreme conscientiousness in his actions and in promulgating his views so constantly displayed in his writings, and particularly well shown when he got the invitation to this hospital. There is considerable difference of opinion as to whether his choice was right or wrong, but the decision was only taken after prolonged consideration of the matter. This care to get at the truth runs through all his work; it is very noticeable in his scientific papers and especially in his addresses. His care in this direction—viz., to ensure as great accuracy as possible—had the curious result that, when he had to deliver any important address, he was almost certain to arrive late at the meeting; the explanation being that, on going over the points of his discourse before leaving his house, something was very apt to occur to him as not sufficiently proven to justify his making a positive statement, and he would, even at the last moment, set to work to look into the matter. It is narrated of him that when he was delivering the Croonian Oration at the Royal Society on the coagulation of blood, a point struck him after he had left his home and he turned into a slaughter-house, had an animal bled, and made the necessary observation before going further; he was in consequence a good many minutes late. Another example of his conscientiousness was the way in which he dealt with his patients, whether private or in the hospital. If, on visiting them, they complained of pain or discomfort, however slight, he would set to work to rearrange the dressings, splints, pillows, &c., irrespective of other engagements; and this was very apt to make him late for appointments and so, contrary to what one would have expected, he never had a large private practice, as practitioners were too busy to make appointments with him, seeing that these appointments might not be punctually kept. In another way this conscientiousness troubled him a great deal—for example, when he was asked to give an opinion in a case on which he himself was not to perform the operation if one were decided on. In many cases the opinion that he felt to be the correct one might depend entirely on whether the wound would remain aseptic or not. If he advised an operation in which asepsis was essential and the operation was not done by him or by someone who believed in and practised asepsis, his opinion, if acted on, might practically condemn the patient to death. In this transition period he therefore quite rightly looked on an opinion given by a surgeon as only applying to his own handling of the case, and he was very much against those who give advice after they have ceased to operate.

"Yet another example of Lister's conscientiousness I can give personally. When my eldest son was born, I asked Lister if I might call him Joseph Lister and if he would be godfather to the child. I candidly admit that I was not familiar with the activities of a godfather, but thought that it was a purely ornamental matter. In answer to my request he replied that he would like to consult Lady Lister first; the next day I received a letter from him saying that they would be very pleased to have the boy called after him, but that his life was so full and busy that he could not undertake further duties such as those of godfather. Apart from this conscientiousness Lister was full of sympathy with sufferers, and was always ready to do what he could to relieve suffering and to help those in need. One has only to look at his portraits to see these characteristics beautifully depicted. His readiness to help became well known and was sometimes much abused. Quite a number of supposed German professors who had come over to England to study lost their libraries on the voyage and came to Lister for help, which they obtained most generously; but as time went on he found that this purchase of libraries was a severe drain on his pocket.

"In spite of the numerous ovations which Lister received on all hands there was no affectation or

THE CENTENARY CELEBRATIONS

The Centenary celebrations commenced with the reception by the King at Buckingham Palace of about a hundred delegates from all parts of the world. Among them may be mentioned —

Foreign Countries

The Argentine Minister (Argentine), Dr Otto Stapf, (Austria), Prof Dr Vilhelm Schaldemose (Denmark), Prof Ali Krogius (Finland), Dr Pierre Bazy, Prof Henri Hartmann, Dr Pasteur Vallery-Radot (France), Prof Dr Max Ritter von Gruber, Prof Dr Albrecht Kossel, and Prof Dr Max Rubner (Germany), Prof Dr C F A Koch (Holland), Signor Roberto Allasandri (Italy), Prof Johan Nicolaysen (Norway), Prof Casimir Kostanecki (Poland), Sir Arthur Schuster F R S (Spain), Prof S Gustaf Hedin (Sweden), Prof F de Quervain (Switzerland), Prof Melvin S Henderson, Prof Dean de Witt Lewis, and Prof William George Maccallum (United States of America)

Overseas Dominions

Prof Kerr Grant Mr R Hamilton Russell (Australia), Prof Irving H Cameron (Canada), Major-General J B Smith, I M S (India) Prof Daniel Colquhoun (New Zealand), and Dr W Watkins-Pitchford (South Africa)

British Delegates

Sir John Rose Bradford (*President*, Royal College of Physicians, London), Sir Charles Sherrington (Royal Society of London and Italy) Sir Berkeley Moynihan (*President*, Royal College of Surgeons of England), Prof George M Robertson, (*President*, Royal College of Physicians Edinburgh), Mr A Logan Turner (*President*, Royal College of Surgeons, Edinburgh), Prof Andrew Fullerton (*President*, Royal College of Surgeons in Ireland), Dr George H Edington (Royal Faculty of Physicians and Surgeons of Glasgow) Sir George Newman (Royal Society of Edinburgh and The Ministry of Health), Prof J Graham Kerr (Royal Philosophical Society of Glasgow), Sir Archibald Garrod (University of Oxford) Sir Humphry Rolleston (University of Cambridge), Prof Percy T Herring (University of St Andrews), Prof Archibald Young (University of Glasgow), Prof John Marnoch (University of Aberdeen) Sir Harold Stiles, (University of Edinburgh), Sir William Taylor (University of Dublin), Sir Holburt Waring (University of London), Mr George Grey Turner (University of Durham), Prof F Craven Moore (University of Manchester), Prof Alfred W Sheen (University of Wales) Prof Leonard P Gamgee (University of Birmingham), Prof William Thelwall Thomas (University of Liverpool), Prof J Kay Jameson (University of Leeds), Prof Edward Mellanby (University of Sheffield), Prof Edward Fawcett (University of Bristol), Colonel Thomas Sinclair (Queen's University of Belfast), Surgeon Vice-Admiral Sir Joseph Chambers (Navy Medical Service), Lt -General Sir Matthew Fell (Army Medical Services), Air Vice-Marshal David Munro (Royal Air Force Medical Services), Sir Walter Morley Fletcher (Medical Research Council), Lord Somerleyton (King Edward's Hospital Fund for London), Dr Eustace M Callender (Medical Society of London), Sir Edward Sharpey Schafer (British Association for the Advancement of Science and the Physiological Society), Mr Robert George Hogarth (*President*, British Medical Association) Sir James Berry (*President*, Royal Society of Medicine), Sir Cuthbert Wallace (Association of Surgeons of Great Britain), Sir James Kingston Fowler (Lister Institute of Preventive Medicine), Sir Frederick Andrewes, F R S (Pathological Society), Dr John Cowan (Royal Medico-Chirurgical Society of Glasgow), Dr James Alexander Murray (Royal Microscopical Society) Sir Frederick Fry (Merchant Taylor's Company), Mr Alfred Hepburn (*Master*, Society of Apothecaries of London), Prof James Peter Hill (University College, London), Dr Ernest Barker (King's College, London), Dr Herbert Morley Fletcher (St Bartholomew's Hospital), Mr Charles Gibbs (Charing Cross Hospital), Mr Walter Fedden (St George's Hospital), Mr Francis James Steward (Guy's Hospital) Mr Arthur Cheatle (King's College Hospital) Prof William Bulloch (London Hospital), Dr Charles M Wilson (St Mary's Hospital), Dr Eric Pearce Gould (Middlesex Hospital), Mr Cyril A R Nitch (St Thomas's Hospital), Dr Archibald M H Gray (University College Hospital) Mr William Turner (Westminster Hospital), Lady Barrett (London School of Medicine for Women) Dr George Mackay (Royal Infirmary, Edinburgh), Mr William George Black (Royal Infirmary, Glasgow), Colonel Donald James Mackintosh (Western Infirmary, Glasgow)

An address was presented to His Majesty by Sir Ernest Rutherford, the President of the Royal Society, in which the work of Lister was described as having effected more for the saving of human life and the prevention and relief of suffering than the scientific activity of any one other man The speaker described Lister as one of the greatest benefactors of the human race, while pointing out the brilliant qualities for investigation that had been necessary in applying the discoveries of Pasteur to the problems of antisepsis and developing modern surgery from that basis The King in reply said —

" I thank you for the address which you have presented It is with pleasure that I receive the delegates who are present here to-day, and so take part in the Centenary Commemoration of Lord Lister's birth Any country might be proud to claim Lord Lister as its citizen, and I and my people heartily welcome the representatives of medical and surgical science, both from the Overseas Dominions and from all parts of the civilised world, who have come to join us in honouring his memory

" You have truly said that Lister ranks among the greatest benefactors to mankind Of all the many changes in the last 100 years none is more striking than the revolution in thought concerning surgery It is hard now to realise the dread and apprehension with which formerly even a minor surgical operation was regarded This change in our ideas is due partly to the discovery of anæsthetics and perhaps even more to Lister's work Lister removed the horror of sepsis from surgical operations, and for this he is rightly described as the father of modern surgery The principles discovered and laid down by him are to day being worked out by his successors and are still fruitful of new applications

" Naturally a layman looks first at the ultimate success and beneficent effects of Lister's work These, however, were not the outcome of happy accident or sudden inspiration, but of long and patient study, of continuous experiment, and finally of a wide knowledge and penetrating insight, enabling him to discern the importance and practical bearing of observations which, to some minds, might have remained a piece of academic research

" It is my earnest desire and hope that the Lister Centenary Celebrations may be in every way successful, and that this gathering of men of science from every quarter of the globe may conduce to foster and to strengthen the cooperation of all nations in the accumulation of scientific knowledge for the common benefit of the human race "

Celebration at King's College Hospital

Address by Sir Watson Cheyne

A large gathering assembled in the Refectory of King's College Hospital on Monday afternoon, April 4th, under the auspices of the Listerian Society, when the chair was occupied by the President of the Society, Mr Arthur Cheatle

The President, in extending a warm welcome to the speakers and others who had known Lord Lister said this centenary was being kept with gladness and with the deepest gratitude and pride, gratitude that such a man had been born into the world to do such a glorious work, and pride because he was a fellow-countryman and was closely attached to King's College Hospital, as surgeon and consulting surgeon for 35 years Exactly 50 years ago he was President of this Society

Sir W Watson Cheyne said that some who had assembled to do honour to the memory of the master he, the speaker, had not seen since they left the hospital, and it warmed his heart to see them again It was during the 16 years spent in this hospital that Lister completed the simplification of his methods of treatment, without in any way altering the principles on which those methods were founded. Lister's work was more widespread in its results than that of any other great man, for its influence on mankind was not limited to any country or any race, the number of lives saved and the amount of suffering and ill-health prevented by it was incalculable So sound were the principles that if anything went

Commemoration Service at St Peter's, Upton Cross, Essex.

A service was held at St Peter's Church Upton Cross on April 5th to commemorate the birth of Lord Lister at Upton House now St Peter's Vicarage on April 5th 1827 The Bishop of Chelmsford preached the sermon and Sir Humphry Rolleston delivered an address which we print on p 780 A procession to the church from the vicarage was formed the Lord Provost of Glasgow the mayors and medical officers of health of local county councils and boroughs representatives of local hospitals and members of the medical profession taking part The Rev A. J Parry vicar of St Peter's has prepared a brief account of Lister s life and work, which was distributed to those attending the service

Reception at the Royal College of Surgeons of England

On the afternoon of Tuesday April 5th the President and Council held the Lister Birthday reception within the walls of the Hunterian Museum A brilliant throng of foreign delegates and leaders of the medical profession from the Dominions overseas and from Great Britain and Ireland. with their ladies were gathered soon after four o'clock in the Museums Library and Council Room of the College being received in the entrance hall by Sir Berkeley and Lady Moynihan and members of the Council In Room I of the Museum the centre of interest was a display. arranged by the Conservator and Librarian. of the manuscripts documents and printed books contained in the Lister Memorial Cabinet of which some account has been given in THE LANCET recently (March 12th, p 553) Among the manuscripts priority should be given to the volume labelled by the late Sir Rickman Godlee "Notes and Drawings Suppuration. Lister. 1851-1907" The folio lay open at the page where Lister in his own rapid and oft-corrected script had placed on record a detailed history of the first case in which the carbolic acid antiseptic dressing was used The patient a boy suffering from a compound fracture of the femur was treated by Lister in his famous Glasgow Ward, in 1865 and though this first experiment proved unsuccessful—relatively so, for the boy does not seem to have died—it marked the beginning of antisepsis, being followed by operations of beautiful perfection Close by this famous volume were also displayed Lister s wonderful drawings of fungi while on a screen were hung Listerian diagrams illustrating the earliest test-tube experiments on bacteria so carefully recorded by the great surgeon in his "Common-Place Books' Four volumes of these now first shown in public, will continue to be one of the glories of the Hunterian Collection One of the diagrams which seems to have been used by Lister in his lectures illustrates *Torula cerevisiæ* and *Bacterium lactis* as also the bacteria found in urine In the Conservator's room two drawings by Sir Rickman Godlee were shown illustrating micro-organisms in the pus of a newly opened abscess first observed and recorded on May 20th 1871 Other exhibits of supreme importance were Lister s own copy of *Palmer s Life of John Hunter* with Lister s notes on two of the title pages and a slim volume containing five letters from Lister's famous precursor Louis Pasteur who inquires in 1871 concerning the exact nature of the bacteria which the distant Englishman has observed in wounds Pasteur avers that he has long heard with interest of Lister s work but reading between the (alas !) rapidly-fading lines of the great Frenchman s manuscript one cannot help surmising that he thought his English disciple somewhat hyperborean Be that as it may the little letter-book is without price Sir William Watson Cheyne s work with Lister at King s College in 1878 is attested in this exhibition by a very interesting MS of Lectures and by three charts chosen from a number illustrating the escape of blood from the jugular arteries of animals

The Dinner in the City to the Delegates

On Tuesday, April 5th, a dinner was given by the Merchant Taylors' Company, in their famous Hall, to the Delegates assembled for the centenary celebrations The function was presided over by the Master. Mr A L F. Cook and the company included as well as a remarkable group of representatives of medicine in all its various branches and of science generally the Lord Mayor of London, the Lord Provost of Glasgow. the Attorney-General, the Minister of Health. the Bishop of Birmingham, Sir William Lister. Sir Edmund Gosse. Sir George Frampton. Lord Chelmsford and Lord Somerleyton After the loyal toasts and the health of the Lord Mayor of London had been drunk the company honoured in silence "the Memory of Lister"

The toast of the Delegates was proposed by Lord Crawford and Balcarres who said that this was a recognition from all parts of the world of Lister's work in physiology and pathology He pointed out that in the general fight against disease the advances that had been made during the lifetime of the Delegates had been vast and progressive. as displayed in the present position of scientific surgery and in what might be called the philosophy of the hospital "We are proud ' said the speaker "to belong to an age in which the relief of human suffering has progressed so marvellously and scientific wisdom been so widely diffused" He wished the physicians and surgeons and pathologists associated with this progress all success

The toast was replied to by Prof J N Nicolaysen and Prof Irving Cameron delegates respectively, from Norway and Canada

Prof Nicolaysen speaking with good command of English expressed the thanks of the Delegates to the Master and Wardens of the Merchant Taylors' Company for their hospitality 'A common feeling he said 'unites all present this evening in most profound respect to the memory of Lister the great son of England whose centenary is being celebrated simultaneously by many of the most venerable institutions in Great Britain Forty years ago I had the great honour and pleasure to be introduced to Sir Joseph Lister (as he then was) and to be present at his operations at King s College Hospital You will understand the feelings of a young surgeon having for the first time an opportunity of seeing at work that hero of his science of whom he had read and heard from the beginning of his medical education. I do not know which I admired more his noble geniality as a man or his thoroughness as an operator This admiration for the great surgeon grew on me as, during the following years I came to learn in a more detailed way of the scientific evolution of his labours; while I was strongly impressed by the fact that Lister's great discovery had been made, not in sudden inspiration, but was the result of close researches made during many years into the determining causes of inflammation and suppuration of wounds And Lister's principles have stood the test His system was taken up in its whole force so to speak during the great war though in a modernised form when a modified aseptic surgery proved insufficient. Magna est veritas et prævalebit."

The toast of the Master of the Merchant Taylors Company was briefly proposed by Sir John Rose Bradford who after testifying to the simplicity of the character of Lister and his tender feelings towards patients and pupils referred to the fact that the Company which was their host had admitted Lister to honorary freedom He said that while the Royal College of Physicians of London made special festival in honour of Harvey. and while the Royal College of Surgeons of England did the same by John Hunter the City of London had, by conferring the Freedom made Lister their own great scientific figure

The proceedings of the dinner were accompanied by an excellent programme of music performed by the band of the Royal Regiment of Artillery and by some delightful singing by the Gresham Singers.

false pride about him. He appreciated all these honours and they were numerous, but they made no difference in his relations with other people or in any way show that he was conscious that he merited any special respect."

Sir **LENTHAL CHEATLE** joined in the welcome to old friends, especially Mr. Hamilton Russell, from Melbourne. He said that Lister was, in every way, the greatest man he had ever met. His great devotion to his work and his courtesy caused all who had dealings with him to revere him. To him a hospital was a sanctuary and he would not endure any infringement of its sanctity. Once, when he had carried out a brilliant operation in 32 seconds, the onlookers cheered him, and Lister's response was to look round and say "Gentlemen, remember where you are." Lister never made inaccurate statements, and he told the speaker one day that he never wished to retract anything he had said or written. The legacy Lister left to mankind, concluded Sir Lenthal Cheatle, would be everlasting, and those who had felt his personal influence would also know that the place filled at his birth and left vacant at his death could never be filled by anybody else.

Colonel R. **BOND**, who came next to Sir Watson Cheyne as Lister's house surgeon, gave many personal reminiscences, and related how he, the speaker, carried the principles into the Sudan campaign and the Boer war.

Mr. **HAMILTON RUSSELL**, of Melbourne, said there had never been to his knowledge any who approached Lister as a dresser; as a dresser at the bedside he was supreme. Every action in Lister's daily life showed that he loved his fellow men; he had the philanthropic temperament, and would point out that when the patient was a child responsibilities were increased.

Mr. **HOWARD P. WARD** spoke of Lister's care in making his own gauze when he discarded his spray and his skill in dressing wounds, which he never tired of doing himself.

Mr. L. **VERNON CARGILL** referred to the care the master inculcated in his students in thinking out every detail of a proposed operation.

Similar tributes were paid by Dr. H. **DISTIN**, Mr. H. **PERRY**, and Dr. A. **BOUSFIELD**.

THE PRIME MINISTER'S RECEPTION

At the reception held in the Great Hall of the British Medical Association on April 5th, the chair was taken by Sir Ernest Rutherford, President of the Royal Society, and delegates from 22 foreign countries and 62 British institutions were received by Mr. Stanley Baldwin, the Prime Minister.

Sir **ERNEST RUTHERFORD** said that it fell to few men in any age to leave behind them such a splendid and permanent memory as Lister had left. It was not necessary to be a specialist to realise what a debt the whole world owed to his discoveries and to his single-minded devotion.

He read congratulatory telegrams from the Imperial Academy of Tokyo and the State Institute of Experimental Medicine at Leningrad.

Mr. **BALDWIN** said that the boundaries of all the nations were broken down in that hall. Only 50 years ago Joseph Lister had come to London to convert his own people. At an International Congress in Amsterdam he had been greeted in words which might well be recalled to mind to-day: "Prof. Lister, it is not only our admiration which we offer you; it is our gratitude and that of the nations to which we belong." These words found their echo years afterwards on the lips of a great American Ambassador who, at a dinner of the Royal Society, said: "My Lord, it is not a profession, it is not a nation, it is humanity itself which with uncovered head salutes you." Such a gathering as this would not have been possible had it not been that in Lister were found all the complementary parts that go to make a man of real greatness. He had been a great master-workman in his own craft; he had brought more relief, more comfort to the human race than almost any man who had lived. But there was also the other side, the man himself. In Lord Lister were those very things which we must admire when we saw humanity raised to its highest point; he was a man truth-loving, truth seeking and truth-living, gentle, filled with charity, a man with never a mean thought. These things were allied to supremacy in his own work.

Lister and France

Prof. **HENRI HARTMANN** (Paris) expressed his pleasure at being appointed to convey the homage of the Académie de Médecine to the memory of Lister, one of its Associate Members. In the middle of the last century Nélaton had written: "A man who came forward with the means of abolishing purulent infection would deserve a statue of gold." French surgeons before Lister—Declat, Lemaire, Maisonneuve and Demarquay—had used carbolic acid in the treatment of wounds, but with indifferent success. Lister had obtained his results because he built up his method on a scientific basis. Prof. Hartmann referred to Lister's practical application of Pasteur's experiments on fermentation, and to Lucas-Championnière's visit to Glasgow in 1868 and his subsequent battle for the establishment of the antiseptic method in France. His friends Berger, Périer, and Terrier had fought the good fight with him and their results had been so striking that soon, as it was said, "Lister was practised throughout France." A veritable revolution in surgery had followed. The discussions of the Société de Chirurgie had entirely changed after 1875; every surgeon had brought before its tribunal his astonishing and novel successes. Surgery continued to evolve; under the vigorous efforts of Terrier, asepsis had been substituted for antisepsis, and less importance was now attached to contamination by germs from the air. Nevertheless, everyone continued to follow the principles which Lister had established; the necessity of putting wounds beyond the power of germs which might contaminate them and the possibility of healing by first intention and of using buried ligatures.

Lister and Germany

Prof. **MAX v. GRUBER** (Munich) said that the greatest successes in the prevention of disease were vaccination introduced by Jenner, the extermination of puerperal fever by Semmelweis, and the antiseptic treatment of wounds by Lister. Lister's work had also an enormous importance to intellectual development, as it was the fruit of theoretical insight. Prof. Gruber said that when a student he had seen what happened daily in an old-fashioned surgical hospital in the era before Lister. Some of the most prominent German surgeons, Bardeleben, Volkmann, and Nussbaum had been among the very first to appreciate to the full the value of antiseptic treatment, and Munich had been the first town to proclaim the immortal glory of Lister and to honour him as one of the greatest benefactors of mankind in 1875. Prof. v. Nussbaum had published a description of the method which according to Lord Lister's own words had contributed more to its rapid victory than any other publication. Under the banner of Lister surgery had made greater conquests within two decades than in two millenniums before. German surgeons had had a glorious share in that triumph. There was not much left of Lister's original methods at present. Many precautions had proved superfluous, others had had to be intensified. But his fundamental perception that wound diseases are infectious diseases had remained unshaken.

Correspondence.

"Audi alteram partem"

BRITISH INSTITUTE OF PHILOSOPHICAL STUDIES

To the Editor of THE LANCET

SIR,—There is evidence that what are termed generally philosophic studies would be of advantage to many medical men both by expanding and defining their outlook in relation to general or individual experiences and by affording assistance in the solution of practical difficulties. The need for clear thinking was never more apparent than it is to-day when our expanded range of knowledge adds constantly to a stock of exact information, the bearings of which cannot be confined to any one branch of science but make themselves felt in every field. "What is it all about?" is a question that every well-informed man asks himself when a mental problem, perhaps with a direct reference to action, presents itself to him in a form that is not dictated by his particular equipment. And the more well-informed he is, the more clear will it be to him that he needs fundamental guidance. In other words, he desires help in clear thinking.

The recently-formed British Institute of Philosophical Studies exists in order to afford this help to those who need it. The general object of the Institute is stated thus: "to bring leading exponents of various branches of philosophy into direct contact with the general—ublic with the purpose of satisfying a need, felt by many men and women in every walk of life, for greater clearness and comprehensiveness of vision in human affairs."

Medical men and women are to-day meeting many difficulties that are arising through the vast development of their science—developments of knowledge, of techniques and of administration. these are being accompanied by a broadening of view in their ranks, and also by a multiplication of the relations of medicine to society brought about by far-reaching changes in the law. The position must therefore often arise when medical men or women need clearness and comprehensiveness of vision. They would benefit by an opportunity of taking counsel with those in other sections of activity, who may be meeting their own problems from a different angle or who may be able to give an opinion on medical problems which gains in breadth and public influence from its detachment from medicine. Further medicine by cooperation can confer on those other sections of activity the advantages of sharing considered medical opinion and of learning the arguments relied upon for its establishment.

Sociological and psychological questions arise constantly out of all medical practice, and not only out of those sides of medical practice apparently concerned with mental disease or moral conduct, while metaphysics must play a part in any comprehensive attempt to distinguish between normal and abnormal conditions physical or mental—indeed between health and disease. A general philosophical equipment will be of great use to the practitioner as a supplement to all detailed scientific knowledge, for it will conduce to clear thinking.

For these reasons we advocate the claims on members of the profession of the British Institute of Philosophical Studies the temporary offices of which are at 88, Kingsway. The Hon. Secretary would be glad to give any information desired. The subscription payable by members of the Institute is only £1 1s. per annum.

We are, Sir, yours faithfully,

(Sgd.) DAWSON OF PENN THOMAS HORDER
HENRY HEAD T. W. MITCHELL
WILLIAM BROWN H. CRICHTON-MILLER

88, Kingsway, London, March 31st, 1927.

TESTS FOR DRUNKENNESS

To the Editor of THE LANCET

SIR,—A great deal of interest has been aroused in the question of the insobriety of motor-drivers by numerous police-court cases which have been commented on in the press, and have often been the subject of conflicting evidence and appeals. Recently the British Medical Association appointed a Committee to inquire into the tests for drunkenness. Their results have now been published.[1]

The Committee's recommendation for a new legal definition of drunkenness is one which will be commended by all who recognise that a man need not be grossly intoxicated by alcohol to render him unfit to be in charge of a car. This point was stressed in a pamphlet published early in 1926 by The True Temperance Scientific Committee, under the title, "The Problem of the Intoxicated Motor-Driver."

Coming now to the tests for drunkenness which the Committee favour, one doubts whether commendation will be as uniform for of the various tests suggested. foremost rank is given to the test of smelling alcohol in the breath or vomit, than which one ventures to suggest, a more unscientific test could not be found for the following reasons:

1. The concentration of alcohol in the exhaled breath is much more a function of the *rate* of blood supply to the lungs than it is to the concentration of alcohol in the blood. Consequently an accused, intoxicated to the stage of restlessness may through his active movements be actually exhaling breath containing a greater concentration of alcohol than one dead drunk whose respirations are slow and shallow.

2. The application of the sense of smell is an uncertain method of analysis. Not only does this sense vary enormously between individuals but also in the same individual. The effect of a cold on the sense of smell is a by-word. Also one wonders how the examining police surgeon's olfactory sense will react if he himself has had alcohol previously with his dinner? The Committee naively point out that the success of the olfactory method of diagnosis depends on the keenness of the sense of smell of the individual applying the test!

One ventures to think that the Report is an unhappy effort to deal with the subject. It is a step backwards, for to urge the usefulness of the sense of smell in this connexion means nothing else. That senior police surgeons many of whom are quite satisfied with the present day tests for drunkenness should favour this particular test, is not surprising, but that an analytical chemist and toxicologist of Sir William Willcox's standing should also subscribe to it is beyond one's comprehension.

This is a subject in which the present writer is keenly interested, because he has been carrying out experimental work during the past four years which bears directly on this difficult problem. Some results of this work were embodied in a paper by Drs. Southgate and Carter,[2] who showed that from an analysis of the alcohol in the urine not only could the concentration of alcohol in the blood (the best index of intoxication) be deduced, but also a close approximation of the least amount of alcohol which had been drunk. The British Medical Association Committee, whilst acknowledging the great value of this work from a scientific point of view, maintain that tests depending on the examination of the urine are not practicable. Why it is not practicable to examine the urine is not stated. Is the difficulty a legal one? One cannot conceive why the police surgeon has a right to examine the excretions from the lungs or a return from the stomach and yet none to analyse the excretions from the kidneys. The impracticability cannot depend on difficulty of analysis, for an accurate analysis of alcohol in the urine can be carried out by any competent analytical chemist in half an hour.

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[1] Summarised in Brit. Med. Jour., Feb. 19th, 1927.
[2] THE LANCET, 1926, i., 207; Brit. Med. Jour., 1926, i., 463.

MEMORIAL SERVICE IN WESTMINSTER ABBEY

On Wednesday morning, April 6th, the centenary of Lord Lister's birth was commemorated by a service in Westminster Abbey, where he would have been buried but for his expressed wish The large congregation was representative both of the sciences which his discoveries enriched and of the public which they served The service opened with Addison's hymn, "The Spacious Firmament on High," and after the chanting of the eighth Psalm, the lesson was read from St Luke vii (verses 19–23) The choir then sang Handel's anthem

> When the ear heard him, then it blessed him and when the eye saw him it gave witness of him He delivered the poor that cried the fatherless and him that had gone to help him Kindness, meekness and comfort were in his tongue If there was any virtue, and if there was any praise, he thought on these things His body is buried in peace, but his name liveth evermore

This anthem was the one sung at the memorial service to Lord Lister at the Abbey in 1912

An address was then given by the Bishop of Birmingham, the Rt Rev E W Barnes, F R S, who called attention to Lister's personal qualities, to the religious principles which guided his actions, to the patient enthusiasm which served his genius, and to the inestimable value of his life-work Lister belonged to that group of men whose achievements gave them a secure place in the history of civilisation Throughout his life his work bore the stamp of humility, in a word, he possessed the true scientific spirit with the insight of genius Praise and success in no way spoiled him, and in nothing did he show himself unworthy of the respect he had gained

Whether through Lister's work discoveries of equal importance would be made in the future—whether we should be able to prevent the onset of disease, it was impossible to say, but there need be no hesitation in affirming that further triumphs in the warfare against disease would surpass the victories already won, for the achievements of the leaders of human progress gave substance to our hopes Lister's single-minded devotion to science would inspire others to work for the welfare of the human race

The service closed with the hymn, "Now thank we all our God"

THE CENTENARY AT GLASGOW

The celebrations at Glasgow were held on April 1st They began with a commemoration service in the Cathedral, to which the clergy, corporation, and academic representatives and delegates walked in procession Sir Donald MacAlister, Principal of the University, read the first lesson and the commemoration address was given by the Rev McLean Watt, Minister of the Cathedral

A civic luncheon followed, at which the Lord Provost presided and Sir John Bland-Sutton proposed the toast of "The Illustrious Memory of Lord Lister" (His speech appears on p 781 of this issue of THE LANCET) A second toast, "The Medical School of Glasgow," was given by Dr A Logan Turner, President of the Royal College of Surgeons of Edinburgh, who referred to Lord Lister's memory as a link between the Glasgow and Edinburgh Schools at which he worked Sir Donald MacAlister spoke of the origin of antiseptic surgery at Glasgow, and Dr R M Buchanan, President of the Royal Faculty of Physicians and Surgeons of Glasgow, giving the toast of "The Glasgow Corporation," referred to the application of Lister's principles to public health

In the afternoon many representatives visited Kelvingrove Park and laid wreaths at the foot of the Lister Monument In the evening there was a reception in the Bute Hall of the University, where Sir Donald MacAlister welcomed the guests and Sir Hector Cameron and Sir George Beatson recalled the character of Lord Lister's work as they had seen it Other addresses were given by Prof Irving, H Cameron (representing the Royal Society of Canada), and Prof Murdoch Cameron, the proceedings ending with a vote of thanks to the speakers, proposed by Prof Archibald Young, who occupies the Regius Chair of Surgery in the University of Glasgow Amongst those who attended the celebrations was Dr W G Stevens, of Renfrew, who was present when Lister performed the first operation at which he observed antiseptic rules

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg -Lt D Duncan has been transferred to the permanent list

ROYAL NAVAL VOLUNTEER RESERVE

Proby Surg Sub-Lt L D Nelson to be Surg Sub -Lt

ROYAL ARMY MEDICAL CORPS

Lt -Col C M Row to be Temp Capt, and relinquishes the rank of Lt -Col

Capt (local Maj) J W Malcolm relinquishes his local rank on ceasing to be empld with the Iraq Levies

ARMY DENTAL CORPS

Temp Lt A Hughes, Dental Surg, Gen List, to be Lt, with seniority 25th May, 1925

MILITIA

Maj E S B Hamilton relinquishes his commn and retains the rank of Maj

TERRITORIAL ARMY

Col A. B Soltau, K H P, to be Hon Col, R A M C Units, 43rd (Wessex) Div, T A

Hon Maj -Gen Sir Berkeley G A Moynihan, Bt, vacates the appt of Hon Col, R A M C Units, 49th (W Riding) Div, T A, on expiration of tenure

Col A D Sharp, K H S, to be Hon Col, R A M C Units, 49th (W Riding) Div, T A

Hon Col J V W Rutherford vacates the appt of Hon Col, R A M C Units, 50th (Northumbrian) Div, T A, on expiration of tenure

Col J Clay, ret, T A, to be Hon Col, R A M C Units, 50th (Northumbrian) Div, T A

Officers Training Corps Edinburgh University Contgt (Med Unit), Sen Div—2nd Lt F H A L Davidson to be Lt

INDIAN MEDICAL SERVICE

Capts F Oppenheimer and Sundar Das Sondhi to be Majs

Lts Sukumar Dutta Gupta and D MacD Fraser to be Capts

The King has approved the retirement of Lt -Cols S Hunt and E D W Greig

Capt Raghunath Bapuji Khare relinquishes his temp commn, and is permitted to retain the rank of Capt

Majs Pherozo Kharsedji Tarapore, Dwarkanath Dhamaji Kamat, W E R Williams, A F Babonau, and Sorabji Jamasji Bhathena to be Lt -Cols

Capt U J Bourke to be Maj

DISTRICT NURSING IN LONDON—The main work of the Central Council for District Nursing in London last year lay in consolidating the nursing of London itself and in extending the service on the outer borders of the county A new association was established at Eltham Hill on provident lines, and there has been considerable extension of work in Middlesex The places where nurses are most obviously needed are the growing areas on the outskirts of London Unfortunately the Council find that its invested funds are practically exhausted and, unless some new source of income can be found, the annual grants will have to be cut down severely It is to be hoped that some way out may be revealed, as the value of the district nurse to the practitioner is only rivalled by her significance as a factor in public health and the prevention of disease and King regarding the anæsthetic properties of pure ether, he stated that of all the commercial ethers which he had examined none was chemically pure. He then described a method which he had evolved for preparing an absolutely pure ether, which consisted of a process by which ether was made to combine with benzidine to form a crystallised double salt. This double salt could be readily purified, and after purification decomposed into its component parts. The ether made in this way was absolutely pure, and, unlike all the commercial ethers which Prof. van Leeuwen had examined, was perfectly stable. It was established also that absolutely pure ether could not be made by redistillation alone, but that a chemical method also was necessary.

A few months later a paper was read at the British Pharmaceutical Conference by G. Middleton[5] of the laboratories of The British Drug Houses Ltd., and in this paper a delicate test for the detection and quantitative estimation of peroxides present in anæsthetic ether was described. The paper contained also, a report on the determination of the stability of various ethers, and from the data given it was observed that ether purified from aldehyde is much less prone to oxidation and to the formation of peroxides than any ether not so purified. Following these researches it came to be more clearly recognised that the presence of impurities in ether causes deleterious effects after administration, and more recently several investigators have provided additional evidence of this view. For instance, J. Mita[6] has demonstrated experimentally what had been repeatedly indicated as a result of the general observations of anæsthetists and others that the toxicity which develops in ether increases proportionately to the degree of oxidation by exposure to light and air; and he showed that oxidised ether in addition to producing local and necrosing effects had very distinct actions on the heart and the central nervous system. He attributed these toxic phenomena to the peroxides first obtained from ether by Wieland.

In October, 1926, the Anæsthetic Committee appointed by the Royal Society of Medicine issued an interim report in which it was stated that "the purer the ether the better the anæsthetic." Also in a paper read before the anæsthetic section at the recent annual meeting of the British Medical Association Dr. F. H. McMechan[7] said:

> "Certain impurities in anæsthetics may merely involve disagreeable odours or tastes; others may be responsible for nausea and vomiting, while still others may induce pathological conditions leading to endangering complications or even death. As most of these are effective when present in traces represented by percentages in the second to the fourth decimal places, their absolute elimination is imperative."

It was clearly the duty of manufacturers to act in accordance with this new knowledge as to the importance of purity in anæsthetic ether, and one of them in particular, The British Drug Houses Ltd., introduced a more highly purified ether, free from all traces of aldehyde and peroxide. This pure ether is packed and issued in light-proof packings under conditions which preclude the possibility of the formation of peroxide, thus permitting its arrival in the operating room in a perfectly pure condition.

The importance of the light-proof packing is due to the fact that, while pure ether is very much more stable to light than less pure ether, it undergoes very gradual change if allowed to stand in the light. If to a bottle of pure ether there is added some stale ether which has been exposed to light, the whole quantity will be rendered unstable. When using the closed method of administration (Shipway) oxygen or air is bubbled through ether in a bottle which is usually of colourless glass. Consequently during the administration impurities are formed in the apparatus. If the practice is followed of adding fresh ether to the surplus left over from the previous operation there accumulates in the apparatus a highly concentrated solution of impurities. Each addition of pure ether therefore merely dilutes this solution: with the result that what is administered to the patient is an impure mixture. The longer the surplus ether is allowed to accumulate in the apparatus the worse is the effect. It is important, therefore, that this residual ether should be thrown away after each operation, so that any fresh ether transferred to the apparatus may not become harmfully contaminated. For the same reason the contents of the apparatus should not be mixed with any ether which is likely to be subsequently used for anæsthetic purposes.

Very little extra expense is involved in taking these precautions; indeed highly purified ether is now made on such a large scale that the makers have reduced the price to about the same as that of other ethers: at the same time it should be emphasised that the advantages resulting from the absence of toxic effects far outweigh any possible considerations of price. Dr. Waldo has done a great public service in directing attention to the dangers resulting from the use of impure ether, and his suggestion that an analyst's certificate of purity should accompany all anæsthetic ether should be strongly supported by enlightened opinion with the object of securing its legal enforcement.—I am, Sir, yours faithfully,

April 2nd, 1927. H. E. LAWS.

OPHTHALMIC BENEFIT.

To the Editor of THE LANCET.

SIR,—I was simply astounded at Mr. Caddy's letter, and must express my full agreement with the replies from Mr. Lumsden and "F.R.C.S. Oculist." Allow me to point out a few fallacies in the working of this scheme. Previous to the adoption of ophthalmic benefit the approved societies were accustomed to pay the opticians a testing-fee of 5s. or more, and some of the societies continue to do so for every insured patient. May I ask why this fee is necessary when no optician demands this fee from the public?

In spite of the doctor recommending that his patient should be examined by an ophthalmic surgeon some societies send the patient direct to the opticians. To my mind this shows a disregard for the patient's sight and is insulting to the doctor. I think I am right in stating that it is intended that the doctor (and not the optician) who is expected to decide as to what cases should go to the ophthalmic surgeons. In my opinion the doctor is placed in an extremely difficult position and the responsibility is too great. Mr. Caddy seems to think it is enough to pick out the cataract, new growth, and glaucoma cases. My extensive out-patients' experience has taught me that a fair percentage of really serious medical cases attend all ophthalmic clinics. Let me mention a few types—e.g., patients suffering from arterio-sclerosis, diabetes, renal disease, hemianopia, retinal hæmorrhage, encephalitis lethargica, optic neuritis, &c. In a proportion of these cases it is surprising how little the visual acuity is affected, and the doctors were not aware of the condition at the time. It was the ophthalmic surgeon who had diagnosed the actual disease. If this is so, here we have a large number of serious cases not recognised by trained medical men. Surely, then, a tradesman with no medical training is less likely to recognise these cases and appreciate their seriousness.

If I were an optician I should hardly like to assume such grave responsibility. One's sight is much too precious, and although 5 per cent. (I think it is more like 20 per cent.) of the cases are involved and because these are panel patients, I think it is criminal to jeopardise the sight of even 1 per cent. of this total.

It will be detrimental to the public interests to have opticians meddling with the work of the ophthalmic surgeons and vice versa. Remember we do not sell glasses, and all prescriptions for glasses go back to the opticians. Why do they seek for this

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[5] G. Middleton: Pharm. Jour., July 26th, 1924.
[6] J. Mita: Jour. de Pharm. et Chem., 1926, iii, [illegible]
[7] F. H. McMechan: Brit. Med. Jour., 1926, ii, 1106.

In their paper, the two authors referred to only asked that the results of their work should be corroborated by others This the British Medical Association committee has denied them If this committee had organised a similar set of tests on the human subject and compared the results of the amount of alcohol drunk, the resulting concentrations of alcohol in the blood and urine, with the toxic symptoms produced, one ventures to think they would agree that anyone, whether accustomed or not to alcohol, with a blood alcohol concentration of 200 mg per 100 grammes of blood, corresponding to about 260 mg in the urine is quite unfit to be in charge of a motor-car

I am, Sir, yours faithfully,

Croydon, March 24th, 1927 H W Southgate

THE PENALISATION OF THE TUBERCULOUS

To the Editor of The Lancet

Sir,—The letters which have appeared lately under this heading are of such great human interest, especially that of " Eradication," that I feel bound to crave space for a few words on this unusual view-point of after-care They express sentiments which go deep down into the well of human nature They fathom the deeps of Life's ocean It is the cry of the wounded to be given a chance , a cry, not for charity, but for work It is almost a universal cry In these two letters we hear it from members of the medical profession This is not usual If we listen we may hear it from members of other professions, from members of the legal profession, from nurses and teachers The cry increases as the economic strain becomes greater, until from the black-coated clerk and those beyond the dole, it becomes the cry of the multitude And the cry is incessant

Those of us who are employed in the tuberculosis field but who are not ourselves sufferers cannot fail to have been struck with the seriousness of the question which " Eradication " addresses to you, Sir " And if they are debarred from getting employment, what is the use of treating them ? " and if we have no answer to that question, what is our position ? How are we to answer the question " If tuberculosis authorities will not employ their ex patients, who can be expected to do so ? "

From one who has had the misfortune to contract the disease, and who has had the still greater misfortune to be denied employment as a sanatorium physician, the cry " What is the good of treating them ? " comes as a poignant appeal We feel he is our own kith and kin To be turned down for a job—the grossest penalisation But it is happening every day to a far greater extent amongst all those who do not belong to the medical profession We hear little of the penalisation in such cases Why ? Because, as a profession, we have never answered, indeed, never faced the question fairly " And if they are debarred from getting employment, what is the use of treating them ? " Medical men who have suffered from pulmonary tuberculosis have in many cases as " Eradication " points out, found in sanatorium work an environment in which their work can be made to suit their damaged condition They have as I have pointed out elsewhere, found an equilibrium But it by no means follows that the work in every institution is light enough for the damaged organ It emphatically is not in many cases, for breakdowns are frequent, and, indeed, deaths are not unknown

But it is not my present object to discuss whether a tuberculous medical man is the ideal medical officer for a sanatorium Faith in the cure may not be entirely lacking in the healthy, however depressing sanatorium statistics may be But of far greater importance is the determination to see that " if tuberculosis authorities will not employ their ex-patients " *then someone else will*, and that " if they are debarred from getting employment (even as a medical man in a sanatorium), they shall be found remunerative employment in an environment best suited to their condition Such an environment I saw last summer at Saranac Lake, such employment for medical men which makes it impossible to speak of the penalisation of the tuberculous, and I look forward to the time when Papworth will provide similar opportunities When we can answer the question " What is the use of treating them ? ", when we can be quite sure that we have the right answer, and not the half-answers usually given, then, and only then, will the penalisation of the tuberculous cease

" Eradication " is too modest Not only should tuberculous medical men combine in an attempt to " cure themselves with an appointment," but they should see to it that all those who have taken the trouble to get well combine also Let us attempt to make it possible for all who have taken the trouble to get well to cure themselves with an appointment—in other words, provide efficient after-care

" To cure ourselves with an appointment " should, indeed, be the slogan of the future for the tuberculous

I am, Sir, yours faithfully,

P. C Varrier-Jones

Papworth Hall, Cambridge, March 28th, 1927

ANÆSTHETIC ETHER

To the Editor of The Lancet

Sir,—The recent remarks by the Southwark coroner Dr F J Waldo, on the desirability of the use of absolutely pure ether for the production of anæsthesia has focused attention again on this important matter, and a review of the position at this stage seems to us to be indicated

Some ten years ago the necessity for purity in ether formed the subject of a controversy which lasted over a period of years It started in 1917 with a claim made by J H Cotton [1] that by the purification of ether he had deprived it of its anæsthetic properties In view of this he attributed the anæsthetic properties of ordinary ether to the presence of ethylene and carbon dioxide Four years later Wallis and Hewer,[2] implied that they, also, had found that pure ether possessed no anæsthetic properties, adding that its function was that of a vehicle for the " anæsthetic compound," the principal constituents of which were certain ketones As a result of this they advocated the addition of ketones to ordinary ether to increase its anæsthetic properties This remarkable publication led to a careful investigation by several workers of the anæsthetic action of ether, and to a study of the physiological action of the impurities which are commonly found in commercial ethers

In a paper published in 1923 Dale, Hadfield and King [3] disposed conclusively of the view that perfectly pure ether was not a good anæsthetic These workers prepared a quantity of ether and purified it by repeated fractionation, washing it with caustic soda and water, boiling with potassium permanganate refractionating, and drying first by calcium chloride and then by metallic sodium and refractionating again By this long and careful process of purification they prepared an ether which distilled between 34 1° C and 34 15° C at 751 mm This ether they regarded as free from aldehydes, ketones acids, mercaptans, alcohol and all other known impurities, including ethylene The pure ether was then tested on animals by Dr Dale, and on human beings by Dr Hadfield, and the results proved that it was in every way a perfectly satisfactory anæsthetic The ketone theory was reduced to an absurdity by this careful and authoritative work

The next step taken was to investigate the physiological action of impurities in anæsthetic ether, and in March, 1924, Prof Storm van Leeuwen [4] of Leyden read a paper before the Anæsthetic Section of the Royal Society of Medicine (in London) in which, in addition to confirming the opinion of Dale, Hadfield and King regarding the anæsthetic properties of pure ether, he stated that of all the commercial ethers which he had examined none was chemically pure. He then described a method which he had evolved for preparing an absolutely pure ether which consisted of a process by which ether was made to combine with benzidine to form a crystallised double salt. This double salt could be readily purified, and after purification decomposed into its component parts. The ether made in this way was absolutely pure, and, unlike all the commercial ethers which Prof. van Leeuwen had examined, was perfectly stable. It was established also that absolutely pure ether could not be made by redistillation alone, but that a chemical method also was necessary.

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[1] Cotton Jour Can Med Assoc, September 1917

[2] R L M Wallis and C L Hewer The Lancet, 1921 i 1173

[3] H H Dale C F Hadfield and H King Ibid 1923, i, 424

[4] Storm van Leeuwen Ibid, 1924, i, 561

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> "Certain impurities in anæsthetics may merely involve disagreeable odours or tastes, others may be responsible for nausea and vomiting, while still others may induce pathological conditions leading to endangering complications or even death. As most of these are effective when present in traces represented by percentages in the second to the fourth decimal places, their absolute elimination is imperative."

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Very little extra expense is involved in taking these precautions; indeed highly purified ether is now made on such a large scale that the makers have reduced the price to about the same as that of other ethers, at the same time it should be emphasised that the advantages resulting from the absence of toxic effects far outweigh any possible considerations of price. Dr. Waldo has done a great public service in directing attention to the dangers resulting from the use of impure ether, and his suggestion that an analyst's certificate of purity should accompany all anæsthetic ether should be strongly supported by enlightened opinion with the object of securing its legal enforcement.—I am, Sir, yours faithfully,

April 2nd, 1927. H. E. LAWS.

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[5] G. Middleton: Pharm. Jour., July 26th, 1924.
[6] J. Mita: Jour. de Pharm. et Chem., 1926, iii, 67.
[7] F. H. McMechan: Brit. Med. Jour., 1926, ii, 1106.

OPHTHALMIC BENEFIT

To the Editor of THE LANCET

SIR,—I was simply astounded at Mr. Caddy's letter, and must express my full agreement with the replies from Mr. Lumsden and "F.R.C.S. Oculist." Allow me to point out a few fallacies in the working of this scheme. Previous to the adoption of ophthalmic benefit the approved societies were accustomed to pay the opticians a testing-fee of 5s. or more and some of the societies continue to do so for every insured patient. May I ask why this fee is necessary when no optician demands this fee from the public?

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If I were an optician I should hardly like to assume such grave responsibility. One's sight is much too precious, and although 5 per cent. (I think it is more like 20 per cent.) of the cases are involved and because these are panel patients, I think it is *criminal* to jeopardise the sight of even 1 per cent. of this total.

It will be detrimental to the public interests to have opticians meddling with the work of the ophthalmic surgeons and vice versa. Remember we do not sell glasses, and all prescriptions for glasses go back to the *opticians*. Why do they seek for this extra and grave responsibility? Have we not all had experience of patients being sold two or three pairs of glasses when only one pair or none was necessary? Similarly, there is the wholesale abuse of forcing the public to buy Crookes's lenses. No, the optician should only dispense our prescriptions and sell other optical goods, and this is the only safeguard for the public. No one denies that there are opticians who are competent to do refraction cases. But I should like the majority to concentrate on *dispensing a prescription accurately and on fitting the frames correctly*. This is their job, and it is really surprising how few know it apart from the class of dispensing opticians. It is quite true the bulk of an ophthalmic surgeon's work is to prescribe glasses, and it is the same for private and hospital work. If 80 per cent. of the work—i.e., refractions of panel patients are referred to the opticians according to Mr. Caddy's wish—I wonder if he will also send similar cases in private to the opticians and only deal with those suffering from ocular diseases. If the public can afford our fees they will do so every time, and I need not state the reasons for it. Why should not the panel patient be accorded the same privileges if his society can afford a reduced fee?

The only sound way to deal with every eye case, whether private or panel, is for the doctor to send such cases direct to an ophthalmic surgeon, who will assume full responsibility. Sight is much too precious to be tampered with by unqualified men, and even the ophthalmic surgeon finds it difficult sometimes to make a diagnosis. Ophthalmic benefit is for panel patients who are free to choose their doctors; similarly, they must be allowed to choose their ophthalmic surgeons. Let us not depart from this principle.

I am, Sir, yours faithfully,
J. MYLES BICKERTON, B.Ch. Camb., F.R.C.S. Eng.,
Dean of Royal Eye Hospital.
London, W., March 29th, 1927.

To the Editor of THE LANCET.

SIR,—Dealing with the various points raised in the last letter (the only unsigned one) under this heading in your issue of April 2nd, may I say that from my own experience of the Acts that have been passed in the 47 States of America, in Canada, and in Australasia, and based upon authoritative information, such legislation has proved to the benefit of the spectacle-wearing public and of those who have diseases of the eye which would have remained undetected but for the findings of the skilled optician.

Secondly, it is not true that the various optical organisations are on terms of bitter enmity. There are only two recognised examining bodies in England, the Spectacle Makers' Company and the British Optical Association, and they work in perfect friendship with each other. Although there are only these two recognised bodies, there are other important bodies of opticians, such as the National Council for the Preservation of Eyesight, the Institute of Ophthalmic Opticians, and the Association of Wholesale Manufacturing Opticians, all of which work in perfect harmony with each other. As is inevitable, not only with unregistered professions, but even with State recognised callings, there are springing up, especially in view of imminent legislation, mushroom societies, and certificates which may be bought with little trouble. It is but natural that such new societies should be at variance with the others, and plead from time to time in the press for equality and broad-mindedness. It is the obvious view-point of an individual without property on the question of equal division of property. The Joint Council of Qualified Opticians is a body with a special licence from the Board of Trade to dispense with the word "Limited," on account of its not giving any profit to its members, and because it is a body formed for a scientific or charitable purpose. It could not be described as a limited company. The entrance fee to the J.C.Q.O. for a qualified optician is nominal—only 5s. It is not correct to state that any further percentage beyond the ordinary two-and-a-half per cent. for ordinary administrative expenses is deducted. The J.C.Q.O. has nothing whatever to do with any eagle or any advertisement, and your correspondent is confusing this society with another body.

Thirdly, the nominal testing fee of 5s. is allowed to an optician in all cases where he finds glasses are not required, and it is this very allowance in such cases, and the severe ethical discipline exercised over its members, that induced the major Approved Societies at its inception to place their work unreservedly through the clearing-house of the J.C.Q.O.

Fourthly, the optician does not advertise or prescribe spectacles to the public as a "cure-all." I am quite certain that if such an advertisement came before the notice of my Executive, the perpetrator would be immediately hauled up for infringement of its code of ethics.

Fifthly, with regard to a very serious charge that your anonymous correspondent makes, that relating to the mistakes of opticians, he is generalising from three of his own cases. Within a week ago, anticipating similar unsportsmanlike attacks, I wrote to our members of the J.C.Q.O. asking them to give me any evidence that they could at short notice in the following clauses: 1. Evidence of errors in diagnosis by medical men. 2. Cases of patients requiring ordinary lenses being specially referred by medical practitioners to ophthalmic surgeons. 3. Evidence to shew that medical men are referring cases to them as optical practitioners. Within two posts I received over 200 bulky envelopes in reply to my request. The task of sorting these is obviously going to be so great that I have not even opened the envelopes. But your correspondent may find that the unsportsmanlike attitude he adopts will only come back as a very powerful boomerang.

Sixthly, your correspondent says that the average optician devotes too much attention to the commercial side, and in contrast mentions the Association of Dispensing Opticians. But the members of this body, for which I have every respect and esteem, do not test sight, and therefore, as is but right, their businesses are purely commercial, with every desire to give good value and service for money, but still commercial.

Lastly, your correspondent makes the absurd statement that anyone can acquire sufficient knowledge in ten hours to call himself a fully qualified optician. I am enclosing the syllabus of our B.O.A. Examinations, where you will see a curriculum such as will *take an average intelligent man from two to three years to prepare for*.

One realises that there are two sides to a question, and that each side may think it is right; but one would like to see such a campaign carried on with regard to truth and with an absence of personalities.

I am, Sir, yours faithfully,
J. H. SUTCLIFFE,
Registrar of the Joint Council of Qualified Opticians,
Secretary of the British Optical Association.
Clifford's Inn Hall, Fleet-street, E.C., April 2nd, 1927.

To the Editor of THE LANCET.

SIR,—In the letter signed "Ophthalmic Surgeon," which appears on page 729 of your last issue, there is a reference to the Joint Council of Qualified Opticians, in which the statement occurs that "the insurance companies allow a testing fee of 5s. to the optician for every case for which spectacles are supplied." Evidently the writer is not familiar with the facts, as the consultation fee of 5s. is paid in every case where the patient is examined by the optician whether the patient is referred for medical advice or not, and has no relation whatever to the supply of spectacles.—I am, Sir, yours faithfully,

F. T. GREGG,
Secretary, Institute of Ophthalmic Opticians.
Bank Chambers, High Holborn, W.C., April 2nd, 1927.

Public Health Services.

SCHOOL MEDICAL SERVICE

AMONG the first annual reports to be presented are those of Ilford, Taunton, and Torquay. Some of the statistical details of these are indicated below.

Name of district	No. on roll.	Av. elem. school attendance	No. of routine children examined.	No. of special examinations and re-inspections	Percentage of children found on routine examination requiring treatment *
Torquay	3,775	3,371	1,274	5,510	19.0
Taunton	2,909	2,681	1,038	2,936	26.8
Ilford	13,144	—†	5,658	8,964	42.1

* Excluding uncleanliness and dental defects. † Not given.

Torquay

The school medical officer, Dr. T. Dunlop, in his introduction, is able to say that there is no child in the Torquay schools with defective vision untreated and that practically all spectacles prescribed have been obtained and made use of. Dr. J. V. A. Simpson points out in his detailed report that this ophthalmic work, like the other treatment facilities of the school clinic, is available for children of pre-school age. The chief factors which produce defects in school entrants are thus stated: (1) Irregular feeding, (2) irregular hours of sleep, (3) infectious diseases. An account is given of the open-air school which is not regarded as "merely a school in the open air." An appendix contains a further series of Dr. Simpson's observations with the kata-thermometer, the time taken to fall from 100° F. to 95° F. is taken as a measure of the cooling and evaporative powers of the air. According to Dr. J. Kerr this instrument "has added enormously to the power of examining the air in respect of ventilation as it integrates all effects, positive and negative, giving a result concordant with the ventilation effects on the body." Dr. Leonard Hill's minima of 6 for the dry and 18 for the wet reading are regarded by Dr. Simpson as too low; he would prefer the figures of 7 and 20 respectively. The detailed figures he gives do not in general reach this high standard; they do indicate, however, that though the buildings may not be ideal, the ventilation is, on the whole satisfactory. In several of the best examples there is a comment "open fires," and in one of the worst "window shut, cord broken."

Taunton

Dr. John Allen, in his eighth annual report, notes with pleasure the supersession of the antiquated long desk by the new single type, but deplores the retention of some insanitary latrines. Although in some cases the attendance has fallen below 60 per cent., owing to mumps and German measles, no school or department has been closed. There has been a rapid rise in the percentage of children requiring treatment—from 10.1 per cent. in 1924 to 26.6 per cent. in 1926—due, of course, to an all-round raising of the standards. Supervision of pre-school children is included in the maternity and child welfare scheme and the records are available for the school medical officer. The orthopædic scheme in conjunction with the Somerset County Council is now working well, and a strong voluntary committee is providing useful help; 2.1 per cent. of the children were classed as cripples and found to be in need of this treatment. This percentage is considerably in excess of the average for England and Wales, but it should be borne in mind that the initiation of a scheme implies a careful look-out for every child in need of orthopædic treatment. The Somerset Association for Mental Welfare have an occupation centre for low grade defectives which is held in the rooms of the local Y.M.C.A. and is open three days a week.

Ilford

With the rapid growth of the population at Ilford and the inclusion of Dr. Barnardo's Mossford School for Girls under the direct control of the local education authority, many more school-children were examined during 1926 than in former years. Dr. A. H. G. Burton regrets that the open-air school, the site of which was approved by the Board of Education in 1924 is not yet in being, nor is there as yet any special provision for mentally or physically defective children. Two interesting tables are given comparing the incidence-rate per 1000 of crippled and defective children in Ilford with that for the country as a whole. The figure for crippled children in Ilford is 1.7 against 10.0 for England and Wales. The Ilford analysis, however, includes only those children who are so physically defective as to be unable to attend school, or who should be in attendance at a special school. This way of stating the figures is misleading in that it tends to lessen the apparent urgency for special provision for such children; it is in the minor and progressive cases that special treatment is most called for and on which attention should be focused. Were he to give the total numbers Dr. Burton would strengthen his urgent request for a remedial clinic for minor defects; in the meantime all minor deformities receive special attention from the supervising instructor in physical training. The high standard of visual acuity demanded is shown by the incidence-rate per 1000 of visual defects in Ilford, 77.0 against 54.7 for England and Wales. All minor defects even in those reading 6/6 Snellen's type are referred to the oculist. The standards adopted for operative treatment for adenoids are "chronic nasal obstruction or where adenoids can be felt digitally." For tonsils "where this condition has been keeping up such defects as otorrhœa, deafness, and frequent attacks of tonsillitis." Statistical tables show the heights and weights of Ilford children compared with the anthropometric standards, and also the school incidence of infectious diseases.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED MARCH 26TH, 1927

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 404 (last week 442); scarlet fever, 1292; diphtheria, 974; enteric fever, 54; pneumonia, 1373; puerperal fever, 39; puerperal pyrexia, 109; cerebro-spinal fever, 13; acute poliomyelitis, 5; acute polio-encephalitis, 1; encephalitis lethargica, 37; dysentery, 15; ophthalmia neonatorum, 146. No case of cholera, plague, or typhus fever was notified during the week.

Deaths.—In the aggregate of great towns, including London, there was one death from small-pox, 1 (0), from enteric fever, 71 (2), from measles, 6 (2), from scarlet fever, 89 (22) from whooping-cough, 35 (11), from diphtheria, 51 (16) from diarrhœa and enteritis under two years, and 224 (33) from influenza. The figures in parentheses are those for London itself. The death from small-pox was registered in Sheffield C.B.

BIRMINGHAM HOSPITALS.—According to the annual report of the Queen's Hospital, the new extension will be completed in a few weeks and, very little later, when the present surgical block has been renovated, the hospital will have added nearly 100 new beds to its normal establishment, thus reducing the serious scarcity of beds in the city.—Although it contains only 116 beds the Women's Hospital and Maternity Hospital last year dealt with the "record" number of 2443 in-patients. The average daily cost per patient was 9*s.* 6*d.* Extensive antenatal work is also being done.—The Birmingham Hospital Saturday Fund likewise achieved a "record" by raising over £65,000 last year. The great increase in applications for convalescent treatment, especially for men, is compelling the enlargement of the Tyn-y-Coed Home by the addition of 60 beds, which will bring up the number to 125.

Special Articles.

BERLIN

(From our own Correspondent.)

Compulsory Insurance for the Medical Profession

The amended law on medical chambers contains the provision that a chamber may establish an insurance institute, membership being compulsory for every medical man or woman residing in its district The money may be collected by contributions from the profession The Berlin Medical Chamber, which includes Berlin the Province of Brandenburg, and those parts of Posen and Western Prussia which are still under German rule, lately suggested the establishment of an institute for life assurance, the contributions were to be 60 per cent of the State income-tax and the insurance allowance was M 1200 (£60) per annum in case of invalidity or after the age of 70, and M 600 for widows and M 480 for every orphan. This scheme caused much discussion in medical circles, it was argued that the tax raised by the Berlin chamber was already rather high, and the proposed contribution would considerably increase it, whilst the benefits were much smaller than those which could be got from private insurance companies In view of growing opposition the Chamber, although authorised to take action as it wished, resolved that the medical profession in the district should vote on the proposal The result was that compulsory insurance was rejected with an overwhelming majority Of 5100 voters only 800 were in favour of it, 2500 were opposed, and 1800 abstained from voting The Democratic Party of the Reichstag has moved that State insurance shall be instituted for the legal, medical, and pharmaceutical professions and for artists and literary men It is pointed out that the great majority of people in these professions have lost their savings by inflation of the currency and that they and their families may become a burden to the ratepayers if unable to work Compulsory State insurance of the medical profession exists already in Bavaria where it is said to work satisfactorily

Pre-matrimonial Advice

A report has recently been issued by Dr Raecke on the work done by the Matrimonial Advisory Office of Frankfort-on-Main Engaged persons applying to the office were examined concerning the health of their families and on their own bodily and psychic condition, especially for the presence of venereal disease or sexual anomalies As regards heredity, it was difficult to get positive answers, 36 per cent of the individuals examined were unable to give any answer at all, and the great majority of the others could only give incomplete replies concerning the health of their relations and forbears It also proved very difficult to ascertain the psychical condition of the people who came to the office, epilepsy, for instance, could not be detected in the consulting room Sexual anomalies and venereal diseases were often concealed, whilst many of the candidates declared that they had only come at the request of their parents and asked for a certificate which could not of course be given to them without investigation being made The work of the office has not led to the results anticipated by some medical men and by the public (The Lancet, 1926 i, 881) It has had, however, a limited usefulness in that it appeals to the conscience of marriage candidates and sometimes appeases the anxiety of hypochondriacs

Early Days of Vaccination in Germany

It is now 125 years since the foundation of the State Institute for Vaccination, as has lately been pointed out by Prof H Gins in a paper read before the Berlin Society for the History of Medicine The first vaccination in Germany was performed as early as 1799 in Hanover Berlin followed in 1800 when Dr Heim, who was the leading practitioner in the city at that time used vaccine received from London The good results which he got were recognised by the Royal Department for Public Health, and a public institute for vaccination was established in 1802 in connexion with the public orphan asylum, where it was arranged that two children with cow-pox should always be at the disposal of medical men At that time vaccination was not, of course, compulsory, and pamphlets were distributed to the public on behalf of the institute in order to make it popular In course of time calf lymph was introduced and soon the institute was able to collect up to 10,000 doses of vaccine from a single animal

An Exhibition on Quackery.

In connexion with a meeting of the German Society for Combating Quackery an interesting exhibition has been held to show the methods of quacks, their advertisements, and their organisation The methods of scientific medicine, the length and intensity of medical study were compared in statistical tables with the six weeks' training advertised in certain papers for intending quacks The State library contributed to the history of quackery by exhibiting old documents in which the cities, universities, and rulers of Germany had warned the public against quacks, and had issued regulations designed to render them innocuous.

SCOTLAND

(From our own Correspondent)

The Aberdeen Joint Hospitals Scheme

In a previous letter (The Lancet, 1926, ii, 873) I described the arrangement by which the municipality was to take over the Poor-law hospitals of Aberdeen This plan has been delayed and Prof. Matthew Hay's original Joint Hospitals Scheme has now emerged upon a new plane One of the difficulties of this scheme was the disposal of the old buildings of the Royal Infirmary, but the Lord Provost of the City has now launched a public appeal for £400,000 to enable the infirmary to surmount this difficulty as to the old buildings, to secure that adequate new ones can be built, and to increase the endowed income in correspondence with the enlarged accommodation It is announced that about £200,000 has been promised already, but as the cost of the Royal Infirmary part of the scheme is estimated at £300,000 there is still £100 000 to be found, besides what is needed to maintain the proportion of endowment income to ordinary revenue

When the Joint Hospitals Scheme was originally announced, opinion was very much divided, but, just as in the case of the extension of the Marischal College over 30 years ago, Prof Hay was satisfied that ultimately the whole community would be be won over to it And now it seems that the Hospital Scheme has really become practical politics It includes, it will be remembered, not merely the new Royal Infirmary, but also the new Sick Children's Hospital (already nearly complete), the new Maternity Hospital (funds already almost adequate), the Tuberculosis Sanatorium (provided by the city), and pathological and teaching accommodation (provided by the University)

Whatever be the forces that have ended in the launching of this appeal, the supporters of the voluntary principle may congratulate themselves on the fine response for the Infirmary section But, of course, the total scheme includes the Municipal Sanatorium, the Municipal Maternity Home, the Municipal Hospital partially maintained by the municipality, and possibly one or two other elements subsidised from rates or grants There remain also the other three large medical problems the institutional treatment of infectious diseases, including the pneumonias and others until recently treated in non-municipal institutions, the institutional treatment of the sick poor, who must *all* be treated according to their needs and numbers, and the institutional preventive treatment of young children from infancy to the end of the school age These problems all have points of contact with the Joint Hospitals Scheme, and it will be interesting to watch their final adjustment As has been frequently pointed out, the municipality and the parish council have no power to select their patients or to adjust their numbers to accidental conveniences of any kind They must provide for all patients in need of treatment This fact marks the limits of the so-called voluntary principle It also demonstrates that however great the voluntary contribution to hospital service may be, it is never in any danger of outrunning the necessities There is always more than enough work both for the voluntary hospitals and for those supported out of the rates

MEDICINE AND THE LAW.

Alleged Negligence in Certification under the Lunacy Act Abortive Action

A WEEK after the Hume-Spry action had come to an end, yet another claim was heard in the High Court, in which a plaintiff alleged negligence on the part of a medical practitioner who had certified insanity The claim was that of Mrs de Freville, of Wokingham, Berkshire, against Dr A V Dill, of Brimscombe, Stroud, Gloucestershire She alleged that on June 9th, 1926, when she went to Oakridge Vicarage, Stroud, to join her husband at the home of her father-in-law, her husband ejected her forcibly from the house, and that, when she obtained entrance through the servants' door, her husband and her father-in-law kept her in the servants' hall till Dr Dill arrived She was taken to the Gloucestershire County Mental Hospital late at night, but next morning she was examined by two other doctors and declared to be of sound mind Her claim was for damages for Dr Dill's negligence in thus certifying her, she also claimed damages for assault and for false imprisonment Dr Dill relied upon the defence embodied in the Lunacy Act—namely, that he signed the certificate in good faith and that he used reasonable care. he maintained that his conclusions regarding the plaintiff's condition at the time of her certification were correct

The case came to an abrupt end in an unusual way Nearly three days were occupied by the opening speech of counsel, the evidence of the plaintiff herself, and that of various witnesses called on her behalf These included the matron and a nurse from the hospital, Dr John Marnan, medical superintendent of the hospital, Dr Thomas Cyril Smith, senior medical officer at the Second County Mental Hospital, Barnwood, Gloucester, Dr T B Hyslop, and Dr James Risien Russell On the fourth day the case for the defendant was opened, and Dr Dill went into the witness-box While he was still under cross-examination, the jury asked if they could stop the case Mr Justice Avory invited them to write their opinion upon a piece of paper If they were satisfied that the plaintiff had failed to establish her claim, they were, of course entitled, at any time after the plaintiff's case had been fully set before them, to find for the defendant as was done in the Hume-Spry case But they were not entitled to find against the defendant without giving a full hearing to what he and his witnesses had to say When his Lordship and counsel had perused the contents of the paper on which the jury's opinion was recorded, it became apparent that the jury's intervention did not take the form of a decision in Dr Dill's favour Three courses were then possible The jury having arrived at a premature conclusion adverse to Dr Dill without having heard both sides, Dr Dill could accept that conclusion and consent to judgment against himself—a step which no defendant was likely to take The second course was that the case should proceed, the judge impressing upon the jury that they must keep an open mind until they had heard all the evidence The third possible course was the discharge of a jury which had shown itself so ill-fitted for its judicial duties The judge adopted the third course If, therefore, the plaintiff persists in her action, she must begin it all over again before a fresh jury The case being thus still sub judice, comment upon the value of the evidence would be improper It may be mentioned, however, that Dr Dill, in his evidence as reported in the *Times*, complained of the small space provided in the form of the certificate for the statement of the practitioner's grounds for signing it He said he tried to condense an immense amount of detail as much as possible, and he agreed that he put down one matter under one heading in the certificate when it should have been entered under another Later, in cross-examination, he agreed that he had included under "Facts observed by myself" a statement that it was obvious that Mrs de Freville's child "cries and does not want to see her," although he had not in fact seen the child, and the entry should have been made under "Facts communicated by others" An error of this kind, of course, is not in itself negligence which entitles a plaintiff to recover damages, but it is worth mentioning here in order to impress upon practitioners who have occasion to sign certificates of this nature that any slip of this kind is fastened upon in cross-examination if the case leads to litigation Probably it does not occur to every doctor who certifies a patient that, if there is no room on the form for what he wants to write, he can set out his full entries on a sheet to be annexed to the certificate

Defence of Epilepsy on Murder Charge Fresh Hearing on Appeal

The Court of Criminal Appeal has power to hear any additional evidence on appeal and also to refer any point involving scientific investigation (which the court thinks cannot be conveniently conducted before the court) to a special commissioner for report or, if occasion arises, to appoint an assessor to the court who has special expert knowledge Where there is an issue of insanity, it seems, the Court of Criminal Appeal abrogates its functions and transfers the matter from the judicial to the executive authorities Giving judgment lately on the appeal of William Knighton, a collier, convicted at the Derbyshire assizes of having murdered his mother, Mr Justice Avory began by declaring that the Court of Criminal Appeal had frequently laid it down that, where the issue of insanity had been before a jury and evidence had been called in support of the defence, the court would not enter further into the evidence on that subject, but would leave the matter to the Home Secretary, who could more conveniently and more effectively investigate any further evidence The defence in Knighton's case was that of insanity arising from epilepsy, it was urged that the act had been committed in a state of automatism following an epileptic attack, the accused was on the best of terms with his mother, and there was no motive for the crime, he voluntarily surrendered himself to the police, and thus provided the only conclusive evidence connecting him with the crime On appeal his counsel applied for leave to call further medical evidence which was not available at the trial The application was rejected for the reason already given, and the appeal was dismissed,

The decision has had an unusual sequel It is now announced that the defending solicitors have submitted fresh evidence to the Home Secretary, and that the latter has thereupon cancelled the execution and referred the case back (as he has statutory power to do) for re-hearing by the Court of Criminal Appeal as soon as sufficient time has been given to the preparation of the case It will be interesting to see whether the fresh evidence is purely that of medical experts or otherwise There will be an opportunity to observe whether the Home Secretary can induce the Court of Criminal Appeal to abandon the rule of excluding fresh medical evidence on appeal, or whether the Court still discriminates against the medical expert.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

WASHINGTON HOURS CONVENTION

ON Thursday, March 31st, on the motion that the House do go into Committee of Supply on the Civil Service Estimates, and Estimates for Revenue Departments,

Mr R J DAVIES raised the question of the ratification of the Washington Forty-eight Hours Convention. He said that he thought they were entitled to know what had been done in respect to a decision by the Government on this very important matter The situation on the Continent of Europe was becoming very serious They were being pressed by labour organisations in other countries, and particularly by Belgium where this Convention has been ratified In relation to questions affecting labour and working people generally and the employment of women and children, the present Government, through the Minister of Labour and his Parliamentary Secretary, appeared to take no notice whatever of the Governing Body and conferences of the International Labour Organisation The only measurement of the enforcement of labour legislation in any country was the number of inspectors appointed, the number of inspections of factories and workshops made, and the number of convictions for contravention of the law The convictions in Belgium in 1925 were 650 In Czecho-Slovakia there were 1054, and in France, which they were told was more lax than any other country, the number was 6596 In Germany there were 615 convictions In Great Britain, where the enforcement of these laws was supposed to be more stringent than anywhere else, the figure as against 6596 in France was just over 1000 That was to say, that for a smaller number of working people and a smaller number of factories and workshops, for every six convictions in France there was only one in our own country The point that we should not ratify the Convention because other countries did not carry out their legislation in the same way as we did, fell to the ground in face of these figures It was understood that Belgium had ratified the Convention unconditionally, France and Germany would ratify conditionally. He also wished to bring before the House the failure of the Government to ratify the Convention relating to the prohibition of the use of white lead in paint He wished to pay tribute to the courage of the Chief Medical Inspector of Factories who, when he found that the Government had decided in favour of regulation instead of prohibition, resigned his position in the Home Office A most sinister fact was that the Federation of British Industries in its official journal stated that they had communicated with the India Office, asking that Department to send to the Bombay Government a communication to the effect that as the British Government had decided not to prohibit the use of white lead in paint, but to regulate it, the Federation asked the Bombay Government to follow the lead of the British Government, and to destroy the provisions for prohibition that it had already set up That was an appalling state of affairs The fact that there were over 200 operative painters always suffering from lead poisoning ought to induce any Government of any political colour to ratify this Convention

Mr BETTERTON Parliamentary Secretary to the Ministry of Labour) said that ratification was not to be obtained merely by registering ratification at Geneva, or by passing a resolution of the House It involved the introduction of a Bill to bring the legislation of this country into conformity with the Washington Convention, and such a Bill naturally required very careful consideration If it was right to ratify, the Government must at least know what the cost would be The whole matter was now under the consideration of a Cabinet Committee

Captain KING (Financial Secretary to the War Office) replying for the Home Office on the question of the White Lead Convention, said it was quite clear that there was no obligation on this Government or on any other to ratify that draft Convention So far as the question of Bombay was concerned, he was not competent to answer for the India Office or for the Bombay Government The Home Secretary had announced that the Regulations were on trial It was hoped that they would be able to remove the danger from the use of lead paint But if that was not so, the Government would come to the House for further powers

The question that the Speaker do leave the chair was agreed to by 213 votes to 77

SANDSTONE WORKERS AND PHTHISIS

The House then went into Committee of Supply, Captain Fitzroy in the Chair

On a vote of £57,110 for expenditure in respect of the Houses of Parliament Buildings,

Mr GARDNER moved to reduce the vote by £100 He said that it was amazing that in the Memorandum which had been prepared in respect to this expenditure, the question of the health of the operatives who were to be called upon to work the Stancliffe stone which it was proposed to use for the repair of the Houses of Parliament, had never been mentioned. It could not be beyond the knowledge of His Majesty's advisers that danger existed in connexion with the working of this stone, because the Office of Works, when it had work to be done with that kind of material, paid the men an extra sum per hour because of the danger of working it Sir Thomas Legge, who was till lately the Senior Medical Inspector of Factories, and who throughout his Civil Service career was engaged in reporting to the Government on work of this kind said —

> "In Great Britain the quarrying and dressing of sandstone, whether in Derbyshire, Yorkshire, or round Edinburgh—Edinburgh is largely built of freestone—must have cost a holocaust of lives The geology of Derbyshire, indeed, has been marked out simply by the death rate from phthisis—high on the sandstone areas, low on the limestone This point is convincingly summarised by the Registrar General's figures, showing that, as compared with 142 of the average male population between 25 and 65 years of age who die of phthisis, there die 127 granite dressers, 129 limestone dressers, and 415 sandstone masons"

Those figures were appalling enough, and for the Government to embark upon this scheme without first taking them into consideration was negligent to say the least of it Sir Thomas Legge went on to say

> "The ultimate effects of silicosis are even slower to show themselves than in the case of lead poisoning Years invariably elapse before the shortness of breath—the result of the slow but sure encroachment on the air spaces—which is the cardinal symptom, makes work difficult, and, to add to the trouble, the tubercle bacillus is as likely as not to find a nidus in the weakened lung At present, unfortunately, methods of removing the dust at the point of production in chipping and dressing by hand have failed, although invention may yet find a way Wetting the stone is a very partial success"

It was often suggested that the masons had only to wet the stone and their death-rate would be lowered, but those who knew the work knew that the man who wetted the stone hindered his output, and for economic reasons therefore he had to take the risk of disease The Medical Officer of the Derbyshire County Council had conducted an inquiry into this subject Taking the death-rate per thousand from 1901 to 1910, the rate among 124 persons, gritstone workers, was 13 7 from phthisis Out of 126 stone workers, some in limestone in the two Matlocks and the two Darleys, the death rate was 7 per 1000 Taking the gritstone and limestone workers generally, the rate was 5 per 1000 Among the persons employed in and about limestone quarries and works, the rate was 1 71 per 1000 Among limestone workers themselves it was 1 52 per 1000 Among persons employed in and about coal-mines in the same district the rate was 68 per 1000 The standard phthisis death-rate was 77 per 1000 Therefore, the workers on this kind of sandstone had to take the greater risk of a death-rate of 13 7 per 1000, as against the average phthisis death-rate of 77 If they compared figures compiled for the same years in respect of the workers in Portland stone, they found that the death-rate among the masons was 1·4 per 1000, among the labourers 1 0, and for all other trades 1 1 per 1000 Dr Brown, one of the medical officers connected with the Home Office, gave a report to that Department in 1922 in which he said that the development of this disease was remarkable It grew in slow stages, and the men who suffered from it, although they appeared to be the same, ultimately died very quickly from its effects If this kind of stone was introduced into London, Mr Gardner continued, they would raise the maximum amount of disease among the men who had to work it, or alternatively they would have to bring men from the area from which the stone came and they would have to send them back to their own districts and compensate them It might be suggested that special tools, such as the pneumatic tool could be used, but the operatives in London were opposed to the use of this tool, and rightly so, because it only expedited the work and aggravated the disease Portland stone was proving its durability, and was being used in place of sandstone, even in the sandstone areas

Captain KING, replying on behalf of the Government, said that in 1922 the sandstone quarry owners in Derby decided to have an examination of their employees They instructed the local medical officers of health to examine 291 operatives Out of this number 5 were found to be suffering from silicosis and 7 from lung diseases Eighty-four of the men were between 40 and 49 years of age, 51 were between 50 and 59, and 21 were 60 years of age and over This showed that the working of this sandstone was not very injurious All the medical officers of health reported favourably on the condition of the men examined The medical officer of health of the North Darley Urban District Council supplied a statement of the death-rate from phthisis in his area from 1909 to 1920 The figures for 1919 and 1920 were representative of the remainder In 1919 the death-rate per 1000 from phthisis was 0 34, the number of deaths from that disease was one a female In the same year the rate for England and Wales was 1 55

Mr **Gardner** You cannot make comparisons of that kind, you must take it in connexion with the men engaged in that particular area

Captain **King** said that it was necessary to consider the state of health in the whole of that area He did not consider that there existed any really satisfactory statistics to prove what was being contended either one way or the other There was no doubt that those who worked sandstone did suffer to a certain extent from silicosis, and that complaint was not unknown among those who worked limestone The matter however, had been carefully considered, and they intended to take every possible precaution to secure the health of those who worked on this stone, not only by damping the stone, but in other ways The workshops in which the men would work within the precincts of the Palace of Westminster would have roofs which could be removed and opened completely in fine weather, so that the men would be working practically in the open air By these precautions he hoped that no bad effects on the health of the workmen would be experienced Hitherto the Home Office had never been requested to prohibit the use of silicious material and it was unreasonable to suggest that while all other buildings and organisations in this country were still allowed to use this particular type of sandstone the Government should be denied the use of it in this case where it was considered to be the most serviceable stone for the purpose

The motion to reduce the vote was negatived without a division

Nursing Homes (Registration) Bill.

On Friday, April 1st, Mrs **Philipson**, in moving the second reading of the Nursing Homes (Registration) Bill, said the principle of the measure had already been approved by a Select Committee of the House That Committee came to the conclusion that the existence of a genuine need for the registration and supervision of nursing homes was fully established In the first place the premises of many nursing homes were structurally defective and unsuitable, secondly the Committee were deeply impressed with the urgent need for registration and supervision, particularly in regard to the class of home which catered for poor people and senile chronic cases In the third place they considered that in many nursing homes the accommodation for the nursing staff was seriously defective Certain progressive areas such as London and Manchester had already in operation local Acts providing for the registration of maternity homes, and in 1926 Parliament passed a general Act providing inter alia for the registration of maternity nurses The Select Committee came definitely to the conclusion that the registration and supervision of maternity homes should be made part of one comprehensive scheme covering all nursing homes Following the principle adopted in the Midwives and Maternity Homes Act 1926, the Select Committee recommended that the authorities to administer any system of registration should be the county councils and county borough councils under the general supervision of the Ministry of Health The Bill substantially gave effect to these recommendations It proposed that the local authority should have power to refuse registration on the ground that the applicant was not a fit person, or that the premises were unsuitable Many homes were managed by persons who were not qualified nurses, and it was thought that it would be arbitrary and unfair for Parliament to deprive these people of their livelihood The Bill did not propose in the case of nursing homes in existence at the commencement of the Act to refuse registration if the person in charge was unqualified, but it did propose to insist that the person who was superintending the actual nursing of the patients should be a qualified nurse While maternity homes were brought into the scheme by the repeal of Part II of the Midwives and Maternity Homes Act, 1926, a special provision was inserted because provision had to be made for the special qualification of certified midwives who normally would be found in many of these establishments In the event of a local authority refusing to register, or cancelling registration, there would be power to appeal to a Court of Summary Jurisdiction, and if the need arose, to Quarter Sessions The duty of inspection was to be carried out by officers of the local authority, and there was a proviso designed to secure that there should not be any inquiry into the medical records of individual patients, which was a confidential matter Under Clause 6 there was provision for the temporary exemption of certain establishments of a charitable nature, and an appeal was allowed if any person was aggrieved by the refusal of a local authority to grant exemption Clause 9 gave a definition of "nursing home" which was designed to exclude certain establishments which were maintained by public authorities or were constituted by special Act of Parliament or incorporated by Royal Charter The definition also excluded any institution which was liable to inspection under the Lunacy Act or the Mental Deficiency Act The definition of "qualified nurse" in Clause 9 brought it into relation with the Nurses' Registration Act, 1919 Clause 10 provided for proper safeguards for the repeal of local legislation as it was very desirable that this general Act should supersede local Acts in various parts of the country If Parliament passed this Bill it would be a safeguard against abuses without unduly interfering with well-conducted establishments and without impairing the privacy of treatment that patients and their medical advisers desired The Bill fulfilled its purpose through existing machinery, and aimed at raising the standard of the conditions under which the sick were nursed, and also the conditions under which the nursing profession performed their duties

Mr **Gerald Hurst**, in seconding the motion for the second reading, said the movement for reform in this matter originated among the nurses themselves The Norwich Nursing Association first raised this question some years ago, because they were appalled by the fact—which was still a fact to-day—that there were up and down the country some hundreds of institutions which called themselves nursing homes, although there were not any qualified nurses on the staff, and although it was an absolute mockery to call such institutions homes As the law stood at present, the words "nursing homes" connoted nothing, and had no legal significance. The result was that the public were persuaded again and again to enter institutions which were, in substance, bogus nursing homes Those who went to a nursing home ought to know that it was not a bogus one and at present, even in the case of homes which were owned by medical men, those doctors might be quite ignorant of the qualifications and characters of the nurses and the accommodation and amenities of the home which they controlled and ran Inspection need not necessarily be inquisitorial A reasonable inspection by qualified persons at reasonable times would, he was sure be objected to by no one who carried on a properly-conducted nursing home There was in the Bill, as now drafted, a mistaken view put forward as to the person who should carry out the inspection The Committee recommended that it should be carried out by the medical officer of health, assisted by his technical staff that was to say, a nurse qualified to go into the matters of nursing, or a sanitary officer to go into questions of sanitation as the case might be In the Bill the word "inspector" was used That was not what the Committee wanted He thought that the practical unanimity among expert opinion and non-professional opinion on this question was eloquent as to the need for this Bill The reason why the Bill only dealt with future maternity homes was that existing nursing homes were effectually and completely covered by the Act passed last year With regard to future homes, the condition to be met before registration was granted, was that the home must be under the charge either of a doctor or a qualified nurse, and then the Bill ought to read, in his view "in that case there should be a proper proportion of qualified nurses on the staff" According to the evidence submitted to the Committee it cost no more to employ a qualified nurse than an unqualified one The evidence given before the Committee satisfied all the members, including the medical members, that abuses were rife in homes owned by doctors, as well as in those run by unprofessional persons He was not reflecting on the whole body of the medical profession, but the fact was established that homes owned by doctors were not necessarily immune from the abuses to which other nursing homes were liable No doctor of any status would object to having his home registered Registration conferred a status rather than a stigma. With a view to meeting hard cases, as far as existing institutions were concerned, the definition of a qualified nurse had been enlarged so as to include, not merely State registered nurses but those who, before the commencement of this Act, had completed a three-years course defined in the Bill

Replying to Mr **A. V Alexander**, Mr **Hurst** gave it as his opinion that if in a convalescent home nursing was given, it would certainly come within the definition of a nursing home

Sir **Douglas Newton** moved the rejection of the Bill, which he said provided for undue and unnecessary centralisation The authorities who would be responsible for administering the Bill would be the council of every county and county borough That cut out the whole of the non-county boroughs of the country These non-county boroughs which were the local education authorities and the authorities under the Maternity and Child Welfare Act, ought to be empowered to administer this Bill If the powers of the Bill were vested in the county council and they had no power to delegate their functions to other local authorities, they would be put to considerable additional expense by increase of staff and travelling expenses of officials to and from the nursing homes He was fully in sympathy with the Bill in regard to the care and welfare of the sick

Mr **Harrison** seconded the rejection of the Bill

Dr **Drummond Shiels** said he hoped the Bill would have a smooth passage through the House He did not think that the general public or the ordinary members of the House realised the need for this legislation. The members of the Select Committee—he spoke for himself at any rate—had no idea that the matter was so serious, and that a Bill of this kind was so much required. It was not a matter entirely of the status of the home; they found that some homes where very large fees were charged, were unsatisfactory, but what they were most impressed with was the number of cases of chronic senile poor people who were kept under deplorable conditions. In one case a home was run by a man and his wife and one small maid-of-all-work, who did the nursing and the housework as well, and attended to 15 or 20 people, practically all of whom were bed-ridden, and could not attend to themselves. The house was filthy, the bed linen was not changed for weeks, the patients and their surroundings were verminous, and the matron or her husband, either separately or together, were frequently under the influence of drink. Regulations should be brought about to prevent such homes from existing at all. The great problem of course in this, as in many other matters, was poverty. These people were paying from 15*s* to 25*s* per week. It was quite impossible to get even adequate food and housing for that sum apart altogether from nursing. Such people, if that was all they could pay, ought to be in a public institution. He believed that in that connexion the increasing use of Poor Law hospitals, with the removal of the stigma would be a very great help to the solution of this problem. He was glad that an attempt was made in this Bill to see that nurses were properly housed. They had very bad evidence before the Committee, even in regard to good homes, on that point. He hoped also that there would be a quota of fully trained nurses in each home. Only slight alterations were necessary to make the Bill perfectly suitable to Scotland, and he would like it to be applied to that country.

Sir RICHARD LUCE said, that as a member of the Select Committee he supported the second reading of the Bill. He came to the question with an open mind when the Committee began their investigation. In days gone by he had found homes in which he had to work which were not as satisfactory as he would have liked, but he had not in recent years at any rate, come to the conclusion that there were any very great scandals going on in such nursing homes as were brought to his notice. But when the Committee started to take evidence his views very rapidly changed, and he soon came to the conclusion that there was a very real need for the registration of these homes. The trouble was mostly not in the regular surgical nursing homes, but more in those which were the sort of odd places that took in a poor class of patients for small fees, and also certain other places which did not hesitate to take a class of patient which they were totally unfitted to deal with. When the original Bill was mooted some two years ago, there was a good deal of objection from the medical profession on certain grounds. He thought they had not realised the real seriousness of the question. Though there was no general objection to registration, the body of the medical profession did lay down certain rules which they would consider necessary. They were very anxious that there should be a delegating body which would be responsible for granting registration, and that there should be representation of medical men and also of nurses. Another great point that was made was that there should be sanctity of professional secrecy between patient and doctor, which he thought had been fairly met in Clause 5. Then there was at first a great demand on the part of the medical profession that homes under the charge of medical practitioners might be exempted, if not from registration, at least from inspection. That exemption was permitted in the Midwives and Maternity Homes Act last year. He thought that the evidence given before the Select Committee, which proved conclusively that certain homes owned by doctors were not above suspicion, had considerably modified the original view of the medical profession, and they would no longer demand the inclusion of an exemption clause. Personally he thought it would be a great mistake to insert such a clause. He saw no objection from the medical point of view to the Bill as it now stood. If the measure was carried out in the proper spirit, there would be four great things gained. They would have gained a coördination of the two kinds of homes which were, previously separated. There was no great difference between a maternity home and a nursing home. By bringing the two classes under registration, they would bring about a coördination which was necessary and reasonable. Further, if the Bill became law, they would secure that nursing homes would have suitable buildings and be properly equipped for the nursing profession according to the class of case they took in. There would also be guaranteed a reasonable standard of nursing. It was quite impossible for every patient to be treated entirely by completely qualified nurses; there were not enough in the country to provide for that purpose, and there must always be a certain number of people who were under training, or passing up to the stage of training. In general hospitals there was only a small proportion of qualified nurses, and there was always a large number of pupil nurses who were undergoing training who did a great deal of the work of nursing the sick in hospital, and there was no reason why a similar sort of arrangement should not be allowed in nursing homes as long as the requisite standard of nursing was maintained. There would also be considerable gain in the case of the nurses themselves. The Committee received a considerable amount of evidence from the proprietors of nursing homes, and from others as well as doctors, that it was essential that the supervising authority should be entirely independent. The Committee felt that it was not wise in the ordinary way that the supervising authority should be a small one. At any rate, it ought to be a borough of very considerable size with a whole-time medical officer of health and complete staff. There were one or two points of criticism, really Committee points, which struck him in reference to the Bill. Clause 1, sub-section (3) (c) did not, so far as he could make out, allow of the patients in maternity cases being attended by a doctor. There might also be difficulties about a nursing home certifying the cause of the death of a patient. It was no business of a nursing home even to have any knowledge of the cause of death under certain circumstances. One could realise that it might be necessary in maternity homes where a considerable number of septic cases were occurring, and when it was known that septicæmia was prevalent in the home; but that was a question of notification rather than of letting them know the cause of death. In the Bill passed last year dealing with the registration of births and deaths, it was laid down that it was the duty of the doctor to send the certificate as a confidential document to the registrar. Therefore, it was not within the rights of a nursing home to have any knowledge of the cause of the death of a patient who had died in the home. It might be a matter of very considerable importance in many cases that the cause of death should not get out, even to the nursing staff. A patient might be suffering from some disease which was due to alcohol. It was not right that that cause of death should be given out to everybody far and wide. He thought there was also some little doubt about the question of the qualified nurse which might be cleared up in Committee.

Major ELLIOT (Under Secretary of State for Scotland), who apologised for the unavoidable absence of the Minister of Health, said that the view of the Government was that, taking the measure as a whole, it was quite reasonable that the House should give it a second reading and place it on the Statute Book. He thought that Sir D Newton and Mr Harrison had made out a strong case in favour of the non-county boroughs. That matter might be further considered in Committee. The number of homes concerned was perhaps larger than the House realised. The Registrar-General in his returns mentioned that there were over 2000 convalescent and nursing homes in England and Wales and, in fact, the number might run as high as 3000. It was quite possible that, with such a large number of institutions, abuses might have crept in. If this Bill was passed they would be able to see whether the beneficial results which had been found in places like London and Manchester would be paralleled in the case of the nursing homes in other places throughout the country.

Dr VERNON DAVIES said that the point which the House must consider was that the matter with which the Bill sought to deal was nothing less than a scandal and must be dealt with as quickly as possible. It was a great step in advance that the medical profession had withdrawn their objections to the inspection of homes owned by doctors. What they were aiming for was that the health of the country should be looked after by competent and trained people, medical men and nurses; that all abuses should be done away with, and that nothing should be hidden.

The motion for rejection was not pressed, and the Bill was read a second time and committed to a Standing Committee.

MIDWIVES AND MATERNITY HOMES (SCOTLAND) BILL.

The Midwives and Maternity Homes (Scotland) Bill has been considered by the Standing Committee on Scottish Bills. Sir CYRIL COBB was in the chair.

On Clause 1 (which amends the Midwives (Scotland) Act of 1915) Mr MAXTON moved an amendment to confine the liability to prosecution and penalty to unqualified persons who attended women in childbirth "habitually and for gain." He said that while it was very desirable that the object of the Bill should be achieved, and that highly-trained women should look after the responsible work of midwifery, it was also desirable that the ordinary decencies of neighbourly life should not be made impossible by the operation of this clause, which was so severe that the onus was put on a woman who rendered assistance in these cases to prove that she had only done so in a case of sudden and urgent necessity. He held that the responsibility should be on the authorities to prove that such a woman had been in the habit of doing this work for payment.

Mr **BARCLAY HARVEY**, who was in charge of the Bill, resisted the amendment While there was no desire to prosecute any woman who came in to help in a case of emergency, the amendment, he said, would knock the bottom out of the clause

Dr **DRUMMOND SHIELS** said that in Scotland maternal mortality had remained high for practically two generations, and there had been very little diminution The neighbourly attentions to which reference had been made were responsible for a great deal of that maternal mortality The main cause of death in these cases was puerperal sepsis, which was due to the neglect of aseptic precautions which unqualified persons could not be expected to understand He suggested that Mr Maxton's point would be met by an amendment which he (Dr Shiels) intended to move later

Mr. **MAXTON** indicated that he wished to press his amendment

Dr **VERNON DAVIES** said that the insertion of the words "habitually and for gain" provided a very bad loophole He thought that the object of Mr Maxton was covered by the clause as it stood

Lieut Colonel **FREMANTLE** asked the Committee not to accept the amendment which, he said, would condemn many mothers to the risk of putting their lives in the hands of incompetent women

After further discussion,

Major **ELLIOT** (Under Secretary for Scotland) said that the position of a woman about to give birth to a child had always been regarded as something exceptional both by Scottish law and the law of other countries It was the only case in which there was a statutory prohibition against action by unregistered persons There was no prohibition against engaging in medical practice but there was a prohibition against engaging in midwifery practice This amendment would make an exception to the law Dr Shiels had an amendment on the paper which he thought constituted a reasonable compromise, although he was advised that that amendment would require the addition of certain words to cover also the case of the registered medical practitioner When the time came for Dr Shiels' amendment he would advise those in charge of the Bill to accept it In the meantime he suggested that the Committee should negative Mr Maxton's amendment

Mr Maxton's amendment was rejected by 26 votes to 12

Dr **SHIELS** moved an amendment providing that there should be no prosecution in a case where reasonable efforts had been made to obtain the services of a duly qualified medical practitioner, or a person certified under this Act

The amendment was agreed to.

Mr **MAXTON** objected to a proviso which exempted medical students from the provisions relating to unqualified attendance

Major **ELLIOT** assured the hon member that the General Medical Council was duly cognisant of its responsibility in these cases In all cases where students were sent out to midwifery cases they had had previous experience in hospital, and they went out to their earlier cases with a registered medical practitioner from the school which they had been attending

On Clause 8 (Registration), Dr **SHEILS** moved an amendment to provide that improper sanitation should be one of the grounds on which an application to register a maternity home might be refused

The amendment was agreed to

Major **ELLIOT** moved an amendment providing that in the case of a maternity home which was not in existence at the commencement of the Act, the person having the superintendence of the nursing of the patients should either be a qualified nurse or a certified midwife He explained that this amendment strengthened the provisions of the Bill and made it clear that a person having the superintendence of the nursing must have the C M B qualification

The amendment was agreed to

On Clause 12 (Inspection of Maternity Homes), Mr **BARCLAY HARVEY** moved an amendment providing that nothing in the Act should be deemed to authorise any officer sent to inspect a maternity home, who was not a duly qualified medical practitioner, to inspect any medical record relating to any patient in such a home He said that he understood that this covered a point which had been made by Dr **VERNON DAVIES** It should provide a sufficient guarantee of secrecy

The amendment was agreed to

On Clause 14 (Power to Exempt Certain Institutions from Registration and Inspection),

Dr **VERNON DAVIES** moved an amendment to secure that the local supervising authority might exempt any hospital or similar institution not carried on for profit and not used mainly as a maternity home He said that the reason for this amendment was that there were certain homes for women where girls were taken in and occasionally gave birth to a child

Dr **SHIELS** said that although he supported the amendment he was rather unhappy about the terms of it He quite recognised that in a public voluntary hospital inspection might not be necessary, but there were many institutions, especially of a charitable or semi-charitable nature, which were conducted on very unsatisfactory lines, and he hoped that the Scottish Board of Health would exercise a little supervision

Lieut -Colonel **FREMANTLE** said that he understood the object of Dr **DAVIES**, but he thought he was proposing a phrase which it would be impossible to administer

Major **ELLIOT** said that his hon friends could thresh the matter out for themselves As the hon member in charge of the Bill did not raise any objection to the amendment he did not think that it was a matter in which the Government, as such, should intervene The amendment might, he thought, be accepted

The amendment was agreed to

On Clause 15 (Interpretation), Major **ELLIOT** moved words to make it clear that "qualified nurse" meant a person registered in the general part of the Register required to be kept under the Nurses' Registration (Scotland) Act 1919, or a person who had before the commencement of this Act completed a three years' course of training in a hospital which, during the period of her training, or subsequently, had become a training school approved by the General Nursing Council for Scotland, the General Nursing Council for England and Wales, or the General Nursing Council for Northern Ireland for the purposes of admission to the general part of such register

The amendment was agreed to

The Committee stage was concluded and the Bill was ordered to be reported to the House

SALE OF FOOD AND DRUGS BILL

This Bill passed through Committee of the House of Lords on Tuesday, April 5th, without amendment

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HOUSE OF COMMONS

WEDNESDAY, MARCH 30TH.

Medical Scales for Merchant Ships

Mr **CONNOLLY** asked the President of the Board of Trade how often the standard list of drugs and appliances which all sea-going ships must take with them was revised in order to keep pace with modern developments —Sir **BURTON CHADWICK** (Parliamentary Secretary to the Board of Trade) replied The last revision of the medical scales for merchant ships was issued in 1924, and the preceding one in 1912

Outbreak of Small-pox in Dundee

Mr **JOHNSTON** asked the Secretary of State for Scotland, whether he could give the House any information regarding the outbreak of small-pox in the congested area in Dundee, if the source of infection had been traced, and what precautions were being taken against the spreading of the disease Sir J **GILMOUR** replied I understand that up to this morning 42 cases of small-pox had been diagnosed in Dundee Of these, four are adults, two are persons of 16 years of age, and the remainder are children of school age or under With the exception of the four adults, who were vaccinated in infancy, all the cases were unvaccinated The disease is very mild in type, and the outbreak is confined to a limited area in the east end of the city The source of infection has not yet been traced, but a member of the staff of the Medical Officer of Health is wholly engaged in endeavouring to discover how the disease reached Dundee All cases are removed to hospital and steps are immediately taken to carry out disinfection Another pavilion is being erected with the utmost expedition at the hospital, and, in the meantime, a marquee is being used as emergency accommodation, and two others are available if required Doctors, inspectors and nurses are carrying out a house-to-house visitation in the infected area, to keep the outbreak under control, and cases of contact are removed to a reception house or kept under daily medical observation in their homes A special staff is engaged on vaccination work under the direction of the Medical Officer of Health, who is, in addition supplying lymph to general practitioners free of charge Lymph for 16 000 persons has so far been issued, centres have been established at which anyone may be vaccinated at any hour of the day, within reasonable distance of his residence, and arrangements are being made for the vaccination of the staffs of workplaces and the inmates of institutions, etc Vaccination is also being carried out at schools As a precautionary measure, steps are also being taken to make chicken-pox compulsorily notifiable throughout Scotland without delay, but meantime this is already in operation in Dundee by arrangement with medical practitioners

Mr **JOHNSTON** Do I understand the right hon gentleman to say that all these cases have arisen in the congested areas in the east end of Dundee, and if so can he take other steps than merely vaccination to limit or prevent the spread of this disease ?

SIR J GILMOUR I think my answer will show that every possible step is being taken to deal with the outbreak at the source by the method of vaccination

Mr JOHNSTON Has the right hon gentleman taken any steps of a sanitary nature to deal with the outbreak ?

SIR J GILMOUR Yes, Sir The officers responsible for the health of the city are taking every possible step in every direction

Dr. VERNON DAVIES Will the right hon gentleman try to ascertain how many so-called conscientious objectors are now submitting to vaccination ?

No answer was given

Health Year Book of the League of Nations

Mr BENJAMIN SMITH asked the Secretary of State for Foreign Affairs why no report regarding conditions in Great Britain was included in the Health Year Book recently published by the League of Nations —Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied A comprehensive survey of the health conditions of the country is contained in the annual reports of the Ministry of Health, and of the Chief Medical Officer and the Registrar-General My right hon friend is not clear that the value of a summary, necessarily much condensed, of the statistics already published would be commensurate with the labour and cost involved in its preparation, but the question will be further considered

Bakehouse Used as Sleeping Apartment

Mr WILLIAM THORNE asked the Home Secretary if his attention had been called to the remarks made by the coroner at the inquest held at Hackney on the 23rd instant in connexion with the death of a baker who had been sleeping in a bakehouse for a considerable time, and whether he intended taking any action in the matter —Sir WILLIAM JOYNSON-HICKS replied I am informed that the local authority, who are responsible for the administration of Section 100 of the Factory and Workshop Act, 1901, have decided to take proceedings against the occupier

THURSDAY, MARCH 31ST.

Pensioners and Light Metal Limbs

Major HILLS asked the Minister of Pensions if he was aware that a number of pensioners with below-knee amputation had asked to be fitted with light metal limbs in preference to wooden limbs, and that in most instances such applications had been refused, the number of cases in which pensioners with below-knee amputation had been fitted with light metal limbs, and in how many of these cases the pensioner had afterwards reverted to the use of wooden limbs —Major G C TRYON replied I have no information to confirm the statement made in the first part of this question but, on the contrary, I am informed by at least one of my largest limb-fitting centres that a number of pensioners who have been fitted with metal limbs wish to exchange them for the new and lighter willow limbs and that more complaints are received from pensioners wearing the metal limb than from those wearing the wooden type The number of cases in which pensioners with below-knee amputations have been fitted with metal limbs, was, in the 12 months ending February last, about 2000, but I have no specific record of the number of cases asked for in the last part of the question

Relieving Officers and Medical Relief

Mr ROBERT RICHARDSON asked the Home Secretary whether he was aware that by the operation of Section 62 of the Rating Act, 1925, and of the Overseers Order, 1927, the overseers would be abolished on 1st April next, and their powers and duties as to relief from poor rate in cases of sudden and urgent necessity and medical relief would be transferred to any relieving officer, that the power of any justice of the peace to order the overseers in certain cases, by writing under his hand and seal, to give temporary relief in articles of absolute necessity but not in money and, in certain cases, to give a similar order for medical relief only, would become a like power to give an order to any relieving officer, and whether he proposed to draw the attention of the justices of the peace to this change in the law —Sir W JOYNSON-HICKS replied Steps are being taken to bring the provision to the notice of justices

Committee on Sexual Offences

Miss WILKINSON asked the Home Secretary whether, in view of the fact that last Session he proposed to delay the introduction of any legislation based on the Report of the Committee on Sexual Offences until the Committee on Young Offenders had reported, he would take advantage of the fact that this latter had now reported and introduce legislation at an early date —Sir W JOYNSON-HICKS replied It will take me some time to complete my consideration of the very important recommendations of the Committee on Young Offenders which has just reported but I adhere to my intention to deal with the recommendations of the two Committees together so far as they require legislation

Certification of Boy under Lunacy Act

Major ALAN MCLEAN asked the Home Secretary whether his attention had been drawn to the case of Reggie Ford, aged 12, who was in 1922 committed to an industrial school and was now in a mental hospital, and whether he would cause inquiries to be made as to the circumstances leading to his present condition —Sir W JOYNSON-HICKS replied The case of this little boy was brought to the notice of my predecessor, who made careful inquiry, and on June 27th, 1924, stated in reply to a parliamentary question that he was "Satisfied that the magistrates, who included two women magistrates, dealt with the case with the fullest sympathy and with a desire to do what was best for the boy. The parents admitted that he was given to pilfering, that he was falling under the bad influence of older boys, and that they were unable to control him, and they asked that the boy might be sent away to school" I agree entirely with my predecessor's statement When the boy was received into the school in January, 1923, he was said to suffer from a nervous disorder, and special attention was given to him under the supervision of the school doctor As the nervous symptoms increased he was examined by a Home Office Medical Inspector, who came to the conclusion that the boy was probably suffering from the after-effects of encephalitis lethargica Arrangements were then made for the transfer of the boy to another school where, with the coöperation of the Somersetshire Education Committee, a special nurse was engaged for him for a considerable time and where he received unremitting care Arrangements were also made for his special observation in a London hospital The boy, however, steadily grew worse and, as it was impossible to keep him in the school he was discharged to the care of the Guardians in July, 1925 Since then I understand, that the boy has been certified under the Lunacy Act and is now in a mental hospital

Committee on Registration of Opticians

Mr ROBERT WILSON asked the Minister of Health whether he was now in a position to announce the names of those who would form the committee to inquire into the registration of opticians ?—Mr CHAMBERLAIN replied The Committee which has been appointed jointly by my right hon friend the Secretary of State for Scotland and myself has now been constituted as follows —Mr F B Merriman K C, M P (*Chairman*), Mr O Aves, Mr W B Barker, Mr H B Brackenbury, M R C S, Mr L G Brock, Mr E Treacher Collins, F R C S, Mrs W L Courtney, Lord Cozens-Hardy, Mr R J Davies, M P, Mr H L F Fraser, LL B, Dr C O Hawthorne, F R C P, Mr G E Houghton, Sir Henry Keith, and Mr J S Henderson, of the Ministry of Health (*Secretary*)

Physical or Medical Disability in Air Force Recruits

Mr HORE-BELISHA asked the Secretary of State for Air what percentage of new recruits for His Majesty's Air Force were discharged on account of some physical or medical disability in 1926 within 12 months of their acceptance —Sir S HOARE replied The answer is 1·46 per cent

Death-rates of Centenarians

Mr DAY asked the Minister of Health the number of persons, both male and female, whose age exceeded 100 years and whose death had been recorded in England and Wales for the five years ended to the last convenient date —Mr CHAMBERLAIN replied —The following are the figures asked for by the hon member Deaths at age 100 and over in England and Wales

Year	Males	Females	Year	Males	Females
1922	18	59	1925	23	69
1923	22	74	1926*	27	61
1924	22	64			

* The figures for 1926 are provisional

The New Food Preservative Regulations

Mr CAMPBELL asked the Minister of Health, if, in view of the new regulations affecting the use of preservatives in food, he had issued, or proposed to issue, to local authorities a suggestion that they should take special pains to warn consumers that certain foods should not be expected now to keep so long in a condition fit for human consumption —Mr CHAMBERLAIN replied No, Sir, I do not propose to make any such suggestion, since only experience can show how far, if at all, the keeping properties of food in the consumers' houses would be affected by the absence of preservatives I may say, however, that in making the regulations I had regard to the circumstances of the ordinary household, and to the fact that most of the principal foods affected were already being sold without preservative by some traders

MONDAY, APRIL 4TH

Mentally Defective Children in Surrey

Mr ROBERT MORRISON asked the President of the Board of Education how many ascertained mentally defective children there were in the elementary education area of the Surrey county council, for how many of these was appropriate provision made by the local education authority for how many was no education of any kind provided, and what steps, if any, he had taken to secure that appropriate education was given to those mentally defective children not receiving it in Surrey —Lord E PERCY replied According to returns furnished by the Surrey Authority, there were in their area in 1926, 259 ascertained educable mentally defective children, of whom 41 were at special schools, 133 at public elementary schools, and three at other institutions The question of making further provision for children of this type is, I understand, engaging the attention of the Authority

Vaccination Technique in Southport

Mr GROVES asked the Minister of Health whether he was aware that the medical officer of health for Southport received a letter from the Ministry of Health stating that the severity of the vaccination reaction reported from Southport had been noticed in other districts and appeared to be caused more by the technique used in vaccinating than by the virulence of the vaccine lymph, and suggesting that a single incision four-fifths of a centimetre long should be made and no criss-cross incision, and whether this was the official view of the Ministry —Sir KINGSLEY WOOD replied My right hon. friend is aware that a letter was written by a medical officer of the Ministry (after having made a local inspection) to the Medical Officer of Health of Southport generally on the lines set out in the first part of the question except that it was made clear that four marks should be made, *each* by a single-line incision, not 4/5 centimetre but 4/5 millimetres long The official view of the Department is set out in the instructions to vaccinators under contract, and the suggestions made in the letter are quite consistent with that view

TUESDAY, APRIL 5TH.

Silicosis among Stone-workers

Dr VERNON DAVIES asked the Secretary for Mines to give for the last three years for which statistics were available the number of cases of silicosis reported among stone workers, the number of deaths from this disease, the number of cases which developed pulmonary tuberculosis and died therefrom; and the kinds of stone which proved to be most liable to produce silicosis among stone workers Colonel LANE FOX replied Silicosis is not in general a disease which is required to be reported and the detailed information asked for is therefore not available, but it may be stated that the kinds of stone most liable to produce silicosis are the more highly silicious sandstones and granite More information will be available on this point when I have the results of a medical inquiry into the dust danger among workers in sandstone which has been undertaken by my right hon. friend the Home Secretary in which my Department is collaborating

Mr HARTSHORN. Can the right hon. gentleman say when he expects to obtain that report?

Colonel LANE FOX No Sir

Mr PALING In view of the increase in the number of cases of silicosis is there any prospect of it being scheduled as an industrial disease?

Colonel LANE FOX Clearly we must have the report before we can take any action of that kind

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CENTRAL LONDON OPHTHALMIC HOSPITAL.—Plans have been prepared for an extension of the buildings, and private paying wards are to be provided, together with better accommodation for the nursing staff Last year more than 1000 accident and urgent cases were attended and 2036 operations, 469 of them of a major character, were performed

ANCOATS HOSPITAL—This hospital, which is situated in one of the most crowded industrial areas of Manchester, will celebrate its centenary in August, 1928, and will shortly make a special appeal for help in carrying out improvements, including a new ward of 100 beds There is a waiting-list of 000, and it is stated that not half the patients on it will ever be admitted Even with the present accommodation 20,000 accidents and casualties are treated annually At least £100,000 will be required for the establishment of the new buildings It appears from the record of the hospital that, for the first quarter of its century of life, it spent anything up to £50 a year on leeches for blood-letting

Medical News.

UNIVERSITY OF DURHAM—At recent examinations the following candidates were successful in the undermentioned subjects —

THIRD EXAMINATION FOR THE DEGREES OF M.B AND B S

Pathology and Bacteriology, Materia Medica, Pharmacology and Pharmacy, Public Health Medical Jurisprudence—M J Arnott, T L Kelly, and H D Ord

Pathology and Bacteriology, Materia Medica, Pharmacology, General Principles of Therapeutics and Pharmacy, Public Health, Medical Jurisprudence—* Coley Goldstein, * J M. Tait and * H G Ungley, H M Brown, D S Buchanan, W C E Diamond

* With second-class honours

UNIVERSITY OF LIVERPOOL—Dr. W S Patton has been appointed to the Dutton Memorial Chair of Entomology.

At recent examinations the following candidates were successful —

Diploma in Tropical Medicine

C P Allen, M L Bahl, B Barrowman, J D Bilimoria, W M Burns E J Daly, G A Dunlop, V Dyream, M Farid, *A M Gillespie S A Gunawardana J Harkness, R Hay, N M Hodivala, Emma Hughes, Kathleen M. Hyslop, R E Ingram-Johnson J S Kapadia, J Macdonald, R S McElroy, W S Maclay, H G Maguire A F Mahaffy, A H Malhotra, H L Malhotra, B S Manghitmalani, J N Mehra, A J Murray, H M Nevin, N. T Olusoga, D B Parakh M R Peters, *R S Rao, S R A Shah, J F Southward Frances C Thompson, B J van de S de Villiers, and R Walkinshaw

* Recommended for the Milne Medal

Diploma in Tropical Hygiene

T A Austin, B Barrowman, W W. Beeson, J C St G Earl, J Hamilton, C F McCon, Winifred H Mitchell, R Nixon, W S Ormiston, and A Robertson

UNIVERSITY OF MANCHESTER—At a recent examination Dr T N Fisher was approved for the Certificate in School Hygiene

UNIVERSITY OF DUBLIN—At recent examinations the following candidates were successful:—

FINAL MEDICAL EXAMINATION—PART I

Therapeutics, Jurisprudence, Pathology, &c—D S P Wilson, H S Smithwick A G C Ffolliott, Kenneth Watson, William Crawford, R I G Reid, F R Falkner, J E M'Mahon, P A. Thornton, and W I Chapman In Completion J A Dowds, Izaak le Roux, E. du P Meiring, and J E Wells.

PART II

Medicine—*R A Q O'Meara, Maximilian Gerber, W F Lane, M F N Griffin R W T H Stewart, R S F Hennessey, G S Smyth, R D Whiteacre, C F Cope, Patrick Brangan, S D K Roberts, G O Taylor, E A Ellis, C L Day, N J U Mather Maurice Sherowitz, S B Dalrymple, S R. Elmes M G J Booysen Norah W Brown, W F Knobel, C de W Meintjes, A C C Charles, D M Carson, and H C Weir

Surgery—Solomon Behr, G O Taylor, G S Smyth, Solomon Gurevich P M Garry G D Edwards, M G J Booysen, Maurice Sherowitz, and R C U Warrington

Midwifery—*P M Garry *E M Gamble, T J Millin, Maximilian Gerber R M Moore J R Hanna Hyman Dundon, J M. M'Elligott I F Ratthaus and Izaak le Roux.

* Passed on high marks

DIPLOMA IN PUBLIC HEALTH

Part I—Meave Halligan, Brenda M Young Sarah M. Coghlan, J V M'Nally, Kathleen M Ball, Kathleen M Kennedy and Margaret E Pedlow

Part II—Anna M Allen

DIPLOMA IN GYNÆCOLOGY AND OBSTETRICS

Anne Siret, and Pritmila Mehta

MEDICAL INSPECTION OF SCHOOL-CHILDREN IN DUBLIN—It was announced last week that the Dublin City Commissioners have prepared a scheme for the inspection of school-children along lines suggested by the medical officer of health Two medical officers are to be appointed to act as school medical officer and assistant school medical officer respectively with the help of two nurses The salaries of the medical officers will be £700 rising by increments of £40 to £900 and £500 rising by increments of £20 to £700 It is intended that the school medical service be coördinated with the maternity and child welfare scheme, and this scheme will be put in the charge of the school medical officers

BRITISH ORTHOPÆDIC ASSOCIATION —The Robert Jones Medal and Prize offered by the Association for 1926 has not been awarded

ROYAL SOCIETY OF MEDICINE —The Society's house and library will be closed from Thursday, April 14th, to Tuesday, April 19th, both days inclusive

BRITISH SCIENCE GUILD —A dinner will be held at the Criterion Restaurant, London, on May 12th Particulars may be had from the Secretary, at 6, John-street, Adelphi, London W C 2

MEDICAL SOCIETY OF LONDON —At a meeting of this society held on March 28th the following were elected Honorary Fellows Prof Irving Cameron (Canada), Prof Sir Charles Scott Sherrington (Oxford), Prof H C Jacobaeus (Stockholm), and Prof K F Wenckebach (Vienna)

THE King of the Belgians has appointed Dr Clement Clapton Chesterman, to be a member of the Commission for the Protection of Natives in the Belgian Congo For the past eight years Dr Chesterman has worked for the Baptist Missionary Society in this colony and has been in charge of the Yakusu Hospital

CREMATION SOCIETY OF ENGLAND —The annual report of this Society shows a satisfactory financial position During the year 1926 2877 *cremations* were carried out at the 16 crematoria in Great Britain as compared with 2701 in the year 1925 Many improvements have been made at the various crematoria belonging to the Society, while a new building is now under construction in Arnos Vale Cemetery, Bristol, and the Guernsey States Committee have decided to erect a crematorium in that island The report records the progress of the cremation movement abroad, and closes with an appeal for public support, for "notwithstanding the Society's financial stability, its resources at present are inadequate to provide space and trained staff to deal with the rapidly increasing volume of business"

HOSPITALS FOR COUNTY CORK —When the health services throughout the Irish Free State were amalgamated a few years ago with county schemes most of the district hospitals were closed, and the hospital accommodation was concentrated into one or two hospitals in each county While this might work well enough in many of the small counties, in large counties, such as Galway or Cork, it put grave hardships on the sick poor of many areas This fault, in the case of Cork, is now to be remedied by the establishment of hospitals in no less than six additional centres—namely, district hospitals and fever hospitals at Macroom, Bantry and Skibbereen, district hospitals at Kanturk and Clonakilty, and a cottage hospital at Bandon At present there is a district hospital at Midleton a surgical hospital at Fermoy, and a district hospital at Youghal The calculated expenditure will be £100,000 Motor ambulances of an improved type have already been provided at Cork, Mallow, Fermoy, Clonakilty, and Skibbereen and ambulances will be provided for the new hospitals when built

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH —On March 22nd Dr N McLeod read a paper on abdominal pain and hyperalgesia He divided the causes of pain in intra-abdominal disorders into two main groups—mechanical and inflammatory In the first group were abnormal muscular movements of the gastro intestinal tube, and different types of pain might be experienced in disordered peristalsis as compared with exaggerated peristalsis He quoted cases of abdominal pain where such dragging on the peritoneum had occurred as a result of bands and adhesions but where the symptoms could only be explained as due to exaggerated muscular movements in the wall of the intestine There were also cases in which dragging or adhesions to parietal peritoneum could definitely be assumed but in which no symptoms arose In speaking of the inflammatory group Dr McLeod discussed the production and the localisation of pain in local peritonitis, visceral and parietal Apparently, he said, the viscero sensory reflex was similarly disturbed in both varieties, but in the case of parietal peritonitis there was an additional factor—namely, the involvement of the cerebro spinal nerve-endings in the extraperitoneal tissue by direct spread of inflammation He concluded that in cases in which visceral peritoneum alone was involved the symptoms were those referable to the organ which was covered by the inflamed peritoneum, whilst in local parietal peritonitis pain was localised over the area of peritoneum affected

A post-graduate course will be held by the James Mackenzie Institute at St Andrews from June 11th to 28th It will largely consist of lectures and demonstrations bearing on the recognition and treatment of disease in its early stages The fee will be £3 3s payable in advance to the Secretary, from whom further information may be obtained

LISTER CENTENARY EXHIBITS —A large collection of Lister relics was on view at the Wellcome Historical Medical Museum on April 4th and at an evening reception on the 7th An excellent handbook illustrates the exhibition

Dr Frances Margaret Harper, late assistant medical officer of health at St Helen's, is joining the medical staff at the hospital established in 1913 on the Ogowe River (French Equatorial Africa) by Dr Albert Schweitzer Dr Harper was attached to the 2nd Malta Company of the Royal Army Medical Corps during the late war, and in 1922 went out to the Baptist Mission Hospital at Bolobo in the Belgian Congo

DAVID LEWIS NORTHERN HOSPITAL, LIVERPOOL.—At the annual meeting the position of this institution of 225 beds was reported to be desperate There is a debt of £20,000, the bank will lend no more because there are no further securities to offer, and the hospital site cannot be mortgaged because it was given by the Liverpool Corporation specifically for a hospital Pending the fruition of the contributory scheme that has been decided upon the Lord Mayor has undertaken to make a special appeal to the city and neighbourhood

TYPHOID FEVER IN MONTREAL —According to the City Health Department the total number of cases of typhoid fever in Montreal since March 1th has been 1510. About 25 per cent have sufficiently recovered to return to work Cases have now appeared at Quebec As a result of the Montreal epidemic, the United States laid an embargo on milk and cream imported from Canada The Canadian Government is endeavouring to have the embargo removed from districts which have not shipped milk and cream to the United States for six months Last year Canada exported milk and cream to the United States to the value of between £1,200,000 and £1,100,000

LIVERPOOL CHILD WELFARE ASSOCIATION —Some idea of the extensive and beneficent work of this association can be gained from the report which was presented at the annual meeting on March 31st During last year 5000 applications for assistance were granted, 32 310 parents were helped, 30,000 visits were paid to homes where help was needed, and 2509 children were sent from congested city areas into the country for periods varying from three weeks to six months In the infant welfare department there were 1308 attendances by expectant mothers, 22 011 by mothers and babies at the weekly consultations, and 331 at the new dental clinic The bank overdraft stands at over £11,000 Parents contributed £1087, mostly in small sums, to the funds of the association

BRITISH SOCIAL HYGIENE COUNCIL —An extraordinary general meeting of the Council was held on 30th March (at Carteret House, Mr E B Turner relieved later by Sir A Newsholme) in the chair Dr David Lees and Mrs C Neville Rolfe reported on their recent four months tour in India Dr Lees had he said, been shocked to find how prevalent syphilis was in India of the cases in one hospital in nine months, 30 per cent were syphilitic, and in a gynæcological clinic in which the blood of every patient was examined, 85 per cent were found to give a positive Wassermann reaction Directors of public health, hospital medical officers, in fact the whole profession, had proved most ready to help in every way, and in conferences of medical men, held in the provinces visited, the profession's demands were formulated for the better treatment of venereal disease, including out-patient clinics at every hospital, with beds set apart in teaching hospitals, antenatal beds in maternity hospitals, special treatment at child welfare centres, provision for the treatment of merchant seamen better teaching for students, opportunities for post-graduate instruction, the appointment of a specialist in venereal diseases on the surgical teaching staff of the Universities and free laboratory service to be provided available by the Government Mrs Rolfe related what had already been done The Government had agreed to grant recreation grounds for merchant seamen and they had asked for a physiological specialist to train head teachers next winter in the fundamentals of social hygiene, in order that they in turn might instruct the teachers in the provinces The delegates were congratulated on what they had secured

A summer school will be held at Keble College, Oxford, from August 3rd to 9th A course of lectures on biology and social hygiene will be given by Prof J Arthur Thomson, and a course on psychology and social hygiene by Dr H Crichton-Miller Applications for membership should be sent to the Secretary, at Carteret House, Carteret-street, London, S W 1

BOLINGBROKE HOSPITAL EXTENSION. — The "William Shepherd" Memorial Wing of this hospital at Wandsworth Common was opened on Monday last by Mrs. H Percy Shepherd wife of Mr. Sheriff Shepherd in whose father's memory it has been erected The Lord Mayor and the Lady Mayoress opened the new operating theatre and Lady Carmichael the new Children s Ward presented by her husband and herself, which will bear her name.

CARLISLE ROTARY CLUB —On March 30th an address on the Lister Centenary was delivered before this Club by Mr Norman Maclaren surgeon to the Cumberland Infirmary As recorded in the article reprinted on p 774 Lister visited Carlisle in 1864 as the guest of Dr. Robert Elliot first medical officer of the town in order to become personally acquainted with McDougall's antiseptic method of sewage treatment. That by adopting this method the town sanitary authorities had suggested to Lister the principles which he afterwards applied to the treatment of wounds, was a fact said Mr Maclaren, of which Carlisle might well be proud

A LEEDS POOR-LAW HOSPITAL. — The Leeds Guardians have approved an important scheme for extending the scope of hospital treatment at the Township Infirmary of 900 beds in Beckett-street. Consultants in aural surgery and gynæcology are to be appointed and will be paid three guineas a visit and five guineas for an operation. A radiologist will receive £250 a year whilst it is proposed to elect three surgeons and physicians at £300 a year, to include all operations and visits The resident staff will be increased to six assistant medical officers. the extra three to be advertised for at £200 a year. Paying patients are to be charged three guineas a week to cover all charges including operations

DONATIONS AND BEQUESTS —St. Mary s Hospital. Manchester have received the following legacies £1000 from the executors of the late Mr Anthony Willis £753 from the executors of the late Mr W H. Beverley and £744 from the executors of the late Mr J. Parr Mr L. John Poingdestre Hacquoil of Sambourne Sneyd Park Bristol shipowner and coal exporter of Cardiff left the residue of his estate after various legacies to his sister for life and on her death the ultimate residue—which will amount to about £10 000—to the Cardiff Royal Infirmary now known as King Edward VII. Hospital Mr John Readhead J P of Rockcliffe South Shields Durham left £1000 to the Ingham Infirmary and South Shields and Westoe Dispensary Mr Henry Jones Evans of Escuan Hall Towyn Merioneth left £1500 to the War Memorial Hospital Towyn

THE LATE DR A G WILKINS —Dr Arthur Godfrey Wilkins who died on March 9th in his fifty-first year was the son of the late Prof A S Wilkins of Manchester University He was educated at Sedbergh and at Owens College and graduated in medicine with honours in 1900 After holding several house appointments at Manchester and Salford he settled in practice in Patterdale. During the 12 years he stayed there he lost no chance of gaining experience *engaging a locum* he would go away from time to time to hospitals or on voyages abroad and in 1906 he was at Valparaiso during the earthquake On the outbreak of war he sold his practice and joined the French Service de Santé. When the age-limit was raised he was granted a commission in the Royal Army Medical Corps and served first at Wimereux and later in East Africa In 1918 he was nominated to the Egyptian Army but he never went to Egypt as the war ended soon after the appointment was made On his return to England Dr Wilkins s health was impaired and private practice was out of the question. He became school medical officer to the Staffordshire County Council and did admirable work in the establishment and administration of clinics. After 18 months however he resigned his appointment feeling that his organisation was as complete as he could make it. The next two years were spent in voyages as ship s surgeon to China and the East Indies On his return he held appointments at Prestwood and Market Drayton Sanatoriums His last post was that of medical superintendent of the Essex County Sanatorium where his ability as an administrator was generally recognised He had gained exceptionally wide experience largely as a result of visiting every hospital sanatorium cripples home asylum or clinic which it was possible to see in the course of his many travels in several continents During the war he made a special study of anæsthetics and became an exceptionally able anæsthetist He contributed to the literature of this subject. His health unfortunately proved unequal to the work at Harold Court and he retired to the Isle of Wight. Dr Wilkins leaves a widow

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE 1, Wimpole-street. W.

MONDAY April 11th —4 30 P.M., WAR. Annual General Meeting. Election of Officers and Council for 1927-1928 Paper Major T J Mitchell R.A.M.C Man Power and the Medical Service in Relation to some of the Principles of War 8 P.M ODONTOLOGY Paper: Prof Gottlieb (Vienna) The Gingival Margin

TUESDAY—5 30 P.M GENERAL MEETING OF FELLOWS Ballot for election to the Fellowship

ROYAL MEDICAL BENEVOLENT FUND 11, Chandos-street Cavendish-square, London, W 1

FRIDAY (to-day) April 8th—5 P.M., Annual Meeting of the Members

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln s Inn Fields W C

MONDAY, April 11th.—5 P.M., Mr. C E. Shattock: Joints.

NORTH-EAST LONDON POST-GRADUATE COLLEGE Prince of Wales s General Hospital Tottenham, N

MONDAY, April 11th —2 P.M. Medical Cases in the Wards. 2 30 P.M to 5 P.M Medical Surgical and Gynæcological Clinics Operations

TUESDAY —2 30 P.M to 5 P.M., Medical, Surgical, Throat, Nose and Ear Clinics Operations

WEDNESDAY —2 30 P.M to 5 P.M., Medical, Skin and Eye Clinics Operations

THURSDAY —11 30 A.M., Dental Clinic 2 30 P.M. to 5 P.M., Medical Surgical, and Ear, Nose and Throat Clinics Operations

ROYAL NORTHERN HOSPITAL POST-GRADUATE COURSE

TUESDAY April 12th —3 15 P.M. (at the Royal Chest Hospital City-road) Dr H. B Day, Diagnosis and Treatment of Bronchial Asthma

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.

TUESDAY April 13th—4 15 P.M. Dr. J C Bramwell: Conditions Simulating Heart Disease

ST MARGARET S HOSPITAL FOR WOMEN, Acomb-street, Whitworth Park Manchester

WEDNESDAY, April 6th —12 noon Mr A C Magian: Demonstration Operation on Ovarian Tumours

Appointments.

ERSKINE-GRAY P L.M S S A. has been appointed Medical Officer to Chatham District Board of Guardians.

REID W J S M.A B Sc M D Aberd, M R C P. Lond, Honorary Physician Ancoats Hospital, Manchester

Sheffield Royal Hospital TOWNROW V, M.B B S Lond F R.C S Eng Surgeon to the Ear, Nose and Throat Department, BARRON D C M D Edin, WILLEY, H L., M B, B Ch Camb, HOLDSWORTH, C D, M.D, B S Lond. PLEASANCE, R E M D Ch.B Shef PAIGE E. F M.B Ch B Shef reappointed Hon. Clinical Assistants MACKINTOSH, K D., M B Ch.B Edin., D P H, Assistant School Medical Officer, Hull

Salford Royal Hospital DYSON, DOROTHY, M. L., M.B Ch.B Manch. and O GRADY MARGARET, M B, Ch.B Manch Additional Anæsthetists MACKENSIE, D C, M.B, Ch.B Edin., House Surgeon in the Orthopædic Department WHITESIDE, E. M.B, Ch.B Manch., House Surgeon. WOTHERSPOON, A M B, Ch.B Edin., Medical Officer of Health for Stoke-on Trent.

Certifying Surgeons under the Factory and Workshop Acts; GRIFFITH, W R. L.R.C P, L.R.C S Edin. (Clwt y Bont, Carnarvon), HILL A. H C (Calvert, Buckingham), MEGAW, W M.B, B Ch. Belf (Audley Stafford)

Vacancies.

For further information refer to the advertisement columns

Ashington Hospital Northumberland—Jun H.S £100

Beit Memorial Fellowships for Medical Research—Fellowships

Bethlem Hospital Lambeth-road S.E—Two H P s £25 per quarter

Birmingham and Midland Eye Hospital—Res Surg O £150

Burnley Victoria Hospital—H.S £150

Cambridge Addenbrooke s Hospital—Cas O and Res Anæsthetist At rate of £130

Central London Ophthalmic Hospital Judd-street W.C—Hon Anæsthetist

Charing Cross Hospital Institute of Pathology 62 65 Chandos-street Strand W C—Asst Pathologist £250 for first six months

Chester, East Lancashire Tuberculosis Colony, Barrowmore Hall, Great Barrow —Asst M O £250
Chester Royal Infirmary —H S £150
Chesterfield and North Derbyshire Royal Hospital —Hon Ophth S
Derbyshire Royal Infirmary, Derby —H P and Asst H S, and Cas O Each at rate of £150
East London Hospital for Children and Dispensary for Women, Shadwell, E —H P H S and Cas O Each at rate of £125
Exeter, Royal Devon and Exeter Hospital,—Res Cas O At rate of £100
Gloucester, Standish House Sanatorium, Stonehouse —Asst M O £250
Guildford, Royal Surrey County Hospital —H S £150
Halifax Royal Infirmary —Third H S At rate of £100
Hampstead General and North West London Hospital, Haverstock Hill, N W —H S H P, and Cas M O Each at rate of £100
His Majesty s Indian Medical Service —Commissions
Hospital for Consumption and Diseases of Chest, Brompton, S W —H P
Infants Hospital, Vincent square, Westminster —Pathologist £600
Ipswich East Suffolk and Ipswich Hospital —H S, for Ear, Throat, and Nose Dept £100
Jerusalem Ophthalmic Hospital —Sub-Warden Also Registrar
Kent Education Committee, School Medical Service —Dental S £500
Lancaster Borough —Asst M O H, &c £500
Leeds, Gateforth Sanatorium —Res M O £400
Leigh Infirmary, Leigh Lancashire —Res H S £150
London Hospital Dental School, Mile End, E —Demonstrator £200
London Hospital E —P to Skin Dept
Maidstone, Kent County Mental Hospital —Asst M O £300
Manchester, Ancoats Hospital —H S for Orthopædic Dept At rate of £100
Manchester City —Asst Tuberculosis O £600
Manchester, County Mental Hospital, Prestwich —Asst M O £350 to £450
Middlesex County Council Dental Service —Asst Dental O £500
Miller General Hospital, for South-East London, Greenwich-road, S E —Out patient O £150
Norwich, Norfolk and Norwich Hospital —H S £120
Portsmouth Royal Hospital —Cas O At rate of £100
Preston Lancs, County Mental Hospital, Whittingham —Sixth Asst M O £350
Prince of Wales's General Hospita , Tottenham, N —Two Hon Anæsthetists Each £40
Public Dispensary, 122, Drury Lane, W C —Res M O £105
Putney Hospital, Lower Common, Putney S W —Res M O £150
Reading, Royal Berkshire Hospital —H S £150
Rochester, St Bartholomew s Hospital —Third Res M O At rate of £175
Royal Chest Hospital, City road, E C —H P At rate of £100 Also Res M O At rate of £150
Royal College of Surgeons of England —Examiners
Royal Northern Hospital, Holloway, N —H S At rate of £70
Royal Waterloo Hospital for Children and Women, Waterloo road, S E —Non Res Cas O £150
Sheffield Royal Hospital —Res H P At rate of £80
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Tunbridge Wells and Counties General Hospital —H S £160
Ventnor, Isle of Wight, Royal National Hospital for Consumption —Med Supt £1000
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Notes, Comments, and Abstracts.

THE CHRONIC RHEUMATIC DISEASES*

By Carey F Coombs, M D, F R C P Lond,

PHYSICIAN WITH CHARGE OF OUT PATIENTS, BRISTOL GENERAL HOSPITAL.

(*Concluded from p 741*)

Non-articular Manifestations

We will now take a brief glance at that last part of this survey to which the Ministry of Health's report gave the name "Non-articular manifestations" In this group are included muscular rheumatism and lumbago, and sciatica and brachial neuritis To all these maladies the general term fibrositis is often applied It must be confessed that we have but little direct evidence to support the hypothesis that this title assumes—namely, that the essential change is an inflammation of the fibrous investments of the muscles, or the nerve trunks, or both That is the assumption, but there is little evidence, for the good reason that people never die of fibrositis and therefore give us little opportunity of seeing under the microscope exactly what it is that happens in an attack of lumbago or stiff neck. It is wonderful how little is known about disease of voluntary muscle I suppose the voluntary muscles are responsible for at least one tenth of the total body-weight, and yet less than one three-hundredth part of what may be regarded as the best modern text-book of medicine in our language is devoted to diseases of those same muscles

As a link between these muscular inflammations and the rheumatic infections of childhood, we ought to take note of the fact, that the pains of the rheumatic child arise in muscles nearly as often as they do in joints Stiff neck, for example, of an unmistakably muscular type may be accompanied in the child by fever and the development of heart disease, proving almost beyond controversy that the muscles of the neck have been invaded and irritated by bacteria Indeed, I have actually seen with the microscope patches of inflammatory reaction in the muscles surrounding the elbow-joint of a rheumatic child Similar inflammatory patches, almost certainly bacterial in origin, have been found in the muscles and intermuscular tissues of persons with fibrositis Moreover, even when there is no opportunity of seeing these patches they can sometimes be felt in the form of inflammatory nodules perceived by the fingers of the observer to lie in the depths of the muscles In sciatica, again, an inflammation of the fibrous sheath of the great sciatic nerve has actually been seen to occur There are, therefore, a number of odd scraps of evidence which justify the existence of that useful though etymologically indefensible term "fibrositis" This complaint that we are discussing muscular rheumatism, with its near relatives sciatica and brachial neuritis, proved to be the commonest of all the forms of rheumatic troubles investigated by the Ministry of Health Committee The figures of their report indicate that if we take a sample group of the insured population we shall find nearly 2 per cent of the men, and more than 1 per cent of the women disabled by complaints that it will be convenient to group together as "fibrositis" This brings graphically before us the new point of view in medicine Formerly the chief motive power of preventive medicine was pity for the sufferings of others Now, however, there is added to this a concern for our own pockets, out of which is taken the money on which these disabled persons are to live I must confess to a certain distaste for this motive, and prefer to assume that in our zeal for the abolition of fibrositis we are full of the best intentions, and prepared, for the sake of preventing suffering, to deprive countless spas, physiotherapeutic institutes, and liniment manufacturers of their means of livelihood

How to abolish Fibrositis

How are we going to set about it? In the first place, fibrositis is clearly a malady of maturity, as the Ministry of Health's figures show This is so generally recognised that even one of His Majesty's judges—who do not, as a rule, display their knowledge of medicine with any confidence—remarked the other day that we are all more or less rheumatic after 40 The influence of sex is curious and exhibits some cross currents Sciatica is commoner in men, brachial neuritis in women Some families are more liable to these complaints than others and occasionally this vulnerability appears, like that of the gouty family, to depend on a familial incapacity to utilise certain foodstuffs "One man's meat is another man's poison", and butcher's meat in general, beef in particular, appears to have a toxic effect on some individuals, an effect which may express itself in the form of muscular pains apparently of rheumatic type In some cases, again, these affections of the fibrous sheaths of muscles and nerves are actually and directly due to gout

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Another influence that cannot be denied is oral sepsis Here again we have to preserve our balance, but without doubt there is a connexion between the two In my own experience this connexion has appeared to be occasional, and not invariable as in the view of some It is so easy to advise the removal of teeth, but impossible to put them back again, and one's sense of proportion is outraged by wholesale extractions advised for the cure of something which they may fail even to relieve, something which is, after all, nothing more than an inconvenience in most cases

Further, the value of morale is seen nowhere, in time of peace, more plainly than in the reaction of different persons to the pains of muscular rheumatism, one might even say to all forms of chronic rheumatic pain At one end of the scale you have the woman who endures heroically the sufferings and limitations of a rheumatoid arthritis, refuses to be tied down to her chair or bed by it, and incidentally escapes the curse of excessive treatment She is often rewarded by an improvement in her condition, and, at worst, succeeds in enjoying life and maintaining her sense of well-being At the other end of the scale is the man who turns with no great reluctance from his work, at the first shock of muscular pain, either to his panel doctor for a certificate or to his spa for a pleasant holiday If we are out on an errand of mercy in our endeavour to prevent those painful maladies, we do well, but if it is merely an economic proposition, as much good might be done by directing our attention to the morale of the public as to its physique

A Review of the Position

And now we are in a position to look back on the whole field over which we have rapidly skimmed We have reviewed the various conditions that may legitimately be called rheumatic, and in a certain order chosen deliberately because it has passed from the known to the less known, from that which is dangerous to that which is serious, and so on to that which is merely inconvenient The diseases we have discussed overlap a good deal more than I have been able to show in so brief a review, both in their symptoms and in their causes For example, the division of these chronic forms of joint disease into rheumatoid arthritis is no more fundamental than a division of the white race into blondes and brunettes The boundary is not a sharp line, it is a blurred zone fading off gradually on either side towards the contrasting extremes Examples of joint disease are met with which represent every shade of combination of the qualities of osteo-arthritis at one end of the scale and rheumatoid arthritis at the other When the degenerative or senile factor is in the ascendancy, the result is a lesion of the joint that approximates to the osteo-arthritic type On the other hand, the more obvious the microbic influence the more nearly rheumatoid the lesion The relation between these two great subdivisions of chronic rheumatic disease is therefore very definite

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Indeed, we are in some danger of coming to treat every one of these rheumatic disorders as the expression of what has been well named "subinfection", infection—that is, by micro organisms that do not ordinarily succeed in doing any damage, though they are continually present on the mucous surfaces of the body That this "*subinfection*" does, indeed, play its part in all forms of rheumatic trouble is almost certainly true, and the recognition of this marks a great step forward But it is obvious to everyone that it is by no means the whole truth For, if all these maladies are merely expressions of the fact that organisms of a low virulence have got into our joints and muscles, how is it that in one patient the result is a rheumatoid arthritis, in another, sciatica? It is clear that between the spot at which the microbe enters the body, and the site of the crippling that it produces, a whole host of causal agents must come into play, differing in one person from those of another, as heredity and environment differ Somehow or other we have to study these influences and disentangle them from one another This is so hard a task that we cannot wonder at its unpopularity It is so much easier to say that the disease is due to septic teeth, and to have those teeth removed, especially when they happen to be someone else's teeth It is here that the inquiry made by the Ministry of Health shows us a more excellent way, and it is much to be hoped that the example which it has set, of voluntary coöperation between a number of doctors in study of the causes of the rheumatic group of diseases, will be imitated and elaborated The organisation of such work as this is no light matter It demands a combination of enthusiasm with patience which is not always to be found Yet I believe we have come to a point in the war against disease beyond which it is impossible to progress except by united action, into which the several branches of our profession may be led but not driven, persuaded but not dragooned It is possible that when all has been done, and every kind of chronic rheumatic trouble subjected to a minute analysis it will lead to nothing but the simplest and most elementary conclusions It may even reduce the campaign for the prevention of chronic rheumatic disease to nothing more dignified than a restatement of Longfellow's couplet —

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A SCHEME FOR COPING WITH INFLUENZA EPIDEMICS

OWING to the serious character of the influenza epidemic in South Africa in 1918, the Union health authorities have recommended that precautions should be taken to prevent a similar occurrence following on the present European epidemic Our South African correspondent has informed us that several of the municipalities have set out schemes of procedure, the details of one of these schemes deserves attention

In Cape Town members of the local branch of the Medical Association of South Africa, the St John Ambulance Association, South African Trained Nurses' Association, Royal Automobile Club, Women's Municipal Association, Boy Scouts, Girl Guides, and other kindred bodies have been asked to coöperate in organising medical and other services in the city in the event of an outbreak of influenza The Council of the Cape Western Branch of the Medical Association of South Africa (B M A.), have recommended the following measures —

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Chester Royal Infirmary —H S £150
Chesterfield and North Derbyshire Royal Hospital —Hon Ophth S
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East London Hospital for Children and Dispensary for Women, Shadwell E —H P H S and Cas O Each at rate of £125
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Gloucester, Standish House Sanatorium, Stonehouse —Asst M.O £250
Guildford Royal Surrey County Hospital —H S £150
Halifax Royal Infirmary —Third H S At rate of £100
Hampstead General and North West London Hospital, Haverstock Hill N W —H S H P , and Cas M O Each at rate of £100
His Majesty s Indian Medical Service —Commissions
Hospital for Consumption and Diseases of Chest, Brompton, S W —H P
Infants Hospital, Vincent square, Westminster —Pathologist £600
Ipswich, East Suffolk and Ipswich Hospital —H S , for Ear, Throat and Nose Dept £100
Jerusalem Ophthalmic Hospital —Sub-Warden Also Registrar
Kent Education Committee, School Medical Service —Dental S £500
Lancaster Borough —Asst M O H , &c £500
Leeds Gateforth Sanatorium —Res M O £400
Leigh Infirmary, Leigh Lancashire —Res H S £150
London Hospital Dental School, Mile End, E —Demonstrator £200
London Hospital E —P to Skin Dept
Maidstone, Kent County Mental Hospital —Asst M O £300
Manchester Ancoats Hospital —H S for Orthopædic Dept At rate of £100
Manchester City —Asst Tuberculosis O £600
Manchester, County Mental Hospital, Prestwich —Asst M O £350 to £450
Middlesex County Council Dental Service —Asst Dental O £500
Miller General Hospital for South-East London, Greenwich road, S E —Out patient O £150
Norwich, Norfolk and Norwich Hospital —H S £120
Portsmouth, Royal Hospital —Cas O At rate of £100
Preston Lancs , County Mental Hospital, Whittingham —Sixth Asst M O £350
Prince of Wales's General Hospital , Tottenham, N —Two Hon Anæsthetists Each £40
Public Dispensary, 122, Drury Lane, W C —Res M O £105
Putney Hospital, Lower Common, Putney, S W —Res M O £150
Reading, Royal Berkshire Hospital —H S £150
Rochester, St Bartholomew's Hospital —Third Res M O At rate of £175
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Exeter, Royal Devon and Exeter Hospital,—Res Cas O At rate of £100
Gloucester, Standish House Sanatorium, Stonehouse —Asst M.O £250
Guildford Royal Surrey County Hospital —H S £150
Halifax Royal Infirmary —Third H S At rate of £100
Hampstead General and North West London Hospital, Haverstock Hill N W —H S H P, and Cas M O Each at rate of £100
His Majesty s Indian Medical Service —Commissions
Hospital for Consumption and Diseases of Chest, Brompton, S W —H P
Infants Hospital, Vincent square, Westminster —Pathologist £600
Ipswich East Suffolk and Ipswich Hospital —H S, for Ear, Throat and Nose Dept £100
Jerusalem Ophthalmic Hospital —Sub-Warden Also Registrar
Kent Education Committee, School Medical Service —Dental S £500
Lancaster Borough —Asst M O H, &c £500
Leeds, Gateforth Sanatorium —Res M O £400
Leigh Infirmary, Leigh Lancashire —Res H S £150
London Hospital Dental School, Mile-End, E —Demonstrator £200
London Hospital, E —P to Skin Dept
Maidstone, Kent County Mental Hospital —Asst M O £300
Manchester, Ancoats Hospital —H S for Orthopaedic Dept At rate of £100
Manchester City —Asst Tuberculosis O £600
Manchester, County Mental Hospital, Prestwich —Asst M O £350 to £450
Middlesex County Council Dental Service —Asst Dental O £500
Miller General Hospital, for South East London, Greenwich-road, S E —Out patient O £150
Norwich, Norfolk and Norwich Hospital —H S £120
Portsmouth, Royal Hospital —Cas O At rate of £100
Preston Lancs, County Mental Hospital, Whittingham —Sixth Asst M O £350
Prince of Wales's General Hospital, Tottenham, N —Two Hon Anæsthetists Each £40
Public Dispensary, 122, Drury Lane, W C —Res M O £105
Putney Hospital, Lower Common, Putney S W —Res M O £150
Reading, Royal Berkshire Hospital —H S £150
Rochester, St Bartholomew's Hospital —Third Res M O At rate of £175
Royal Chest Hospital, City road, E C —H P At rate of £100 Also Res M O At rate of £150
Royal College of Surgeons of England —Examiners
Royal Northern Hospital, Holloway, N —H S At rate of £70
Royal Waterloo Hospital for Children and Women, Waterloo road, S E —Non-Res Cas O £150
Sheffield Royal Hospital —Res H P At rate of £80
Stockton on Tees, Stockton and Thornaby Hospital —Hon S to Ear, Nose and Throat Dept
Tunbridge Wells and Counties General Hospital —H S £160
Ventnor, Isle of Wight, Royal National Hospital for Consumption —Med Supt £1000
West End Hospital for Nervous Diseases, 73, Welbeck-street, W —Cas P £200
West Ham County Borough —Asst M O and Maternity and Child Welfare £600

Births, Marriages, and Deaths.

BIRTHS

COLDREY —On March 28th, at Chatham House Rotherham, Yorks, the wife of Eric Coldrey, M D, F R C S, of a son

FULLER —On April 1st at St Michael's Lodge, Winchester, the wife of C B S Fuller, M C, M D, M R C P, of a son

MARRIAGES

MACKAY—MACDONALD —On March 25th, in London, George W M Mackay, M A, M B, Ch B, to Catherine E S Macdonald

MARTIN-WARD —On April 2nd, 1927, at St Thomas Church Belfast, by the Very Reverend the Dean of Connor, Alexander Reid Martin, M B B Ch Belf, D P M Lond of Sheppard and Enoch Pratt Hospital, Baltimore U S A, son of Mrs C R Martin, Wilmont-terrace, Belfast to Nancy daughter of the late John K Ward and Mrs M J Ward, University-street Belfast

MILLS—GOODING —On March 31st, 1927, at St Thomas of Canterbury, Woodford Wells by the Rev Fr Isidore McCann O F M, John Mills M B Ch B only son of Mrs S E Mills of St Annes on Sea Lancs, to Rita Gooding, daughter of Mr and Mrs F C Gooding of Buckhurst Hill, Essex

DEATHS

MACEWAN —On March 31st, at his residence 2, Airlie Place, Dundee, David MacEwan, M D, C M LL D Emeritus, Professor of Surgery, University College, Dundee, in his 81st year

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

Notes, Comments, and Abstracts.

THE CHRONIC RHEUMATIC DISEASES*

BY CAREY F. COOMBS, M D, F R C P LOND,

PHYSICIAN WITH CHARGE OF OUT PATIENTS, BRISTOL GENERAL HOSPITAL.

(Concluded from p 741)

Non-articular Manifestations

WE will now take a brief glance at that last part of this survey to which the Ministry of Health's report gave the name "Non-articular manifestations" In this group are included muscular rheumatism and lumbago, and sciatica and brachial neuritis To all these maladies the general term fibrositis is often applied It must be confessed that we have but little direct evidence to support the hypothesis that this title assumes—namely, that the essential change is an inflammation of the fibrous investments of the muscles, or the nerve trunks, or both That is the assumption, but there is little evidence, for the good reason that people never die of fibrositis and therefore give us little opportunity of seeing under the microscope exactly what it is that happens in an attack of lumbago or stiff neck It is wonderful how little is known about disease of voluntary muscle I suppose the voluntary muscles are responsible for at least one-tenth of the total body-weight, and yet less than one three-hundredth part of what may be regarded as the best modern text-book of medicine in our language is devoted to diseases of those same muscles

As a link between these muscular inflammations and the rheumatic infections of childhood, we ought to take note of the fact, that the pains of the rheumatic child arise in muscles nearly as often as they do in joints Stiff neck, for example, of an unmistakably muscular type may be accompanied in the child by fever and the development of heart disease, proving almost beyond controversy that the muscles of the neck have been invaded and irritated by bacteria Indeed, I have actually seen with the microscope patches of inflammatory reaction in the muscles surrounding the elbow-joint of a rheumatic child Similar inflammatory patches, almost certainly bacterial in origin, have been found in the muscles and intermuscular tissues of persons with fibrositis Moreover, even when there is no opportunity of seeing these patches they can sometimes be felt in the form of inflammatory nodules perceived by the fingers of the observer to lie in the depths of the muscles In sciatica again, an inflammation of the fibrous sheath of the great sciatic nerve has actually been seen to occur There are, therefore, a number of odd scraps of evidence which justify the existence of that useful though etymologically indefensible term "fibrositis" This complaint that we are discussing muscular rheumatism, with its near relatives sciatica and brachial neuritis, proved to be the commonest of all the forms of rheumatic troubles investigated by the Ministry of Health Committee The figures of their report indicate that if we take a sample group of the insured population we shall find nearly 2 per cent of the men, and more than 1 per cent of the women disabled by complaints that it will be convenient to group together as "fibrositis" This brings graphically before us the new point of view in medicine Formerly the chief motive power of preventive medicine was pity for the sufferings of others Now, however, there is added to this a concern for our own pockets, out of which is taken the money on which these disabled persons are to live I must confess to a certain distaste for this motive, and prefer to assume that in our zeal for the abolition of fibrositis we are full of the best intentions, and prepared, for the sake of preventing suffering, to deprive countless spas physiotherapeutic institutes, and liniment manufacturers of their means of livelihood

How to abolish Fibrositis

How are we going to set about it? In the first place, fibrositis is clearly a malady of maturity, as the Ministry of Health's figures show This is so generally recognised that even one of His Majesty's judges—who do not, as a rule, display their knowledge of medicine with any confidence—remarked the other day that we are all more or less rheumatic after 40 The influence of sex is curious and exhibits some cross currents Sciatica is commoner in men, brachial neuritis in women Some families are more liable to these complaints than others and occasionally this vulnerability appears, like that of the gouty family, to depend on a

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* Lectures on the Causes and Prevention of Rheumatism delivered under the Chadwick Trust The first lecture appeared in two instalments in THE LANCET of March 12th and 19th The second lecture (the first half of which appeared last week) was given on March 10th 1927

Hunterian Lecture

ON THE

PATHOLOGY AND TREATMENT OF THE RETAINED TESTIS IN CHILDHOOD.

Delivered before the Royal College of Surgeons of England on Feb. 18th, 1927,

By A. H. SOUTHAM, M.D., M.Ch. Oxf., F.R.C.S. Eng.,
HUNTERIAN PROFESSOR OF SURGERY, ROYAL COLLEGE OF SURGEONS OF ENGLAND,
AND
E. R. A. COOPER, M.D., M.Sc. Manch.,
DEMONSTRATOR OF ANATOMY IN THE UNIVERSITY OF MANCHESTER.

In selecting a subject for a lecture in commemoration of John Hunter none is more appropriate than the question of retention of the testis. This problem was one of profound interest to Hunter, and it need hardly be recalled that in 1786 he published his classical work on the "Situation of the Testis in the Fœtus with its Descent into the Scrotum." In this treatise he wrote: "The descent of the testicle is very slow which is not completed before birth, often requiring years for that purpose, and it sometimes never reaches the scrotum, especially the lower part of it. It sometimes happens that one of the testicles remains in the cavity of the abdomen through life, never changing its situation. When one or both testicles remain through life in the belly I believe they are exceedingly imperfect, and probably incapable of performing their natural functions, and that this imperfection prevents the disposition for descent taking place." In spite of the large amount of research in this direction, it is remarkable to find that little has been added to Hunter's observations on the phenomenon of testicular descent. His teachings on this problem, as on many others, have stood the test of time. There has been, however, considerable controversy regarding the condition of the retained testis which Hunter believed to be "exceedingly imperfect." Without referring to the various controversial aspects, it is hoped in this lecture to show that such a testis is *not necessarily* imperfect, and that any serious alterations in its condition are secondary, depending on the persistence of the malposition. Should this prove to be the case, then it is surmised that operative completion of the anatomical descent of the testis, before the intervention of secondary changes, will enable the gland to pursue its normal development.

The condition of retention of the testis was recognised long before Hunter gave the subject prominence in his "Treatise on Animal Œconomy" in 1786. It is said that Tamerlane, the conqueror of Western Asia during the fourteenth century, was afflicted with the deformity. Reference was made to the anomaly in the writings of Paré, Meibomius, and Salmuth; Haller, in 1755, in his "Opuscula Pathologica" described the intra-abdominal origin of the testis, and the descent into the scrotum during intra-uterine life. During the nineteenth century Lockwood emphasised Hunter's beliefs regarding the importance of the gubernaculum in the descent of the testis; whilst in 1851 Lecompte noted the predisposition of the misplaced organ to malignant degeneration. The first recorded operation to correct the malposition of a retained testis appears to have been performed by Koch of Munich in 1820.

Statistics show that anomalies of migration of the testis are not infrequent, true retention of the organ being perhaps the most common of these deformities. It has been stated by Wrisberg that 30 per cent. of newly born infants suffer from incomplete descent of one or both testes, though it is believed that the greater number of these organs reach the scrotum spontaneously during the first few weeks of life. It is difficult to estimate accurately the incidence of retention amongst the general male population. In consequence the rather limited figures from hospital admissions and army recruits will be quoted as the most convenient.

Of 10,000 recruits examined by a recruiting board in Scotland in 1916–17, unilateral or bilateral cryptorchidism was present in 52 individuals, an incidence of 5 cases per 1000. Hempel found 2 cases per 1000 were so affected in 7,000,000 Austrian recruits; while figures obtained from the American War Department in 1920 estimated the occurrence of this deformity at 3·1 per 1000. At the Manchester Royal Infirmary during a period of 15 years, amongst 57,000 male surgical admissions, there were 409 cases of retained testis—that is, 7 per 1000.

The association of some anomaly of testicular descent with hernia is not a rare occurrence. Mixter of Boston, has stated that mal-descent of the testis was present in 7·1 per cent. of cases of hernia in children. Coley has estimated the incidence at 3 per cent. At the Royal Manchester Children's Hospital cryptorchidism was found to be present in 9 per cent. of cases of inguinal hernia. In general, as far as these statistics permit, it may be stated that unilateral or bilateral cryptorchidism occurs roughly in 5 subjects per 1000; and the condition is often associated with a hernia of the inguinal type. The occurrence of retention of the testis seems, then, to be of sufficient frequency, apart from complications, to warrant serious consideration directed towards its correction.

There still exists a wide variance in the opinions of surgeons as to the best way of treating this deformity, and many pathologists are doubtful as to the functional capacity of a retained testis. Whilst it is true that the condition may cause little trouble during childhood, it may be a source of considerable irritation to the individual in later life. This results not only from the abnormal anatomical position of the organ, but also from secondary complications, and doubt as to its ability to function.

I propose first to give a short account of the mechanism of the descent of the testis, and to mention the function of the gland; secondly, the anatomical and histological structure of the normal and retained organs will be compared; and lastly, the question of treatment is to be considered and a description given of the anatomical results obtained in 50 cases which have been under observation during the past five years. The series under consideration are all cases of true retention of the testis—that is to say, a congenital, anatomical defect, where the testis, descending in its normal path, has failed to reach the scrotum. No case of ectopia testis, where the organ deviates from its usual route, has been included.

THE MECHANISM OF DESCENT OF THE TESTIS

The testes in man are developed as intra-abdominal organs close to the primitive kidneys, and during intra-uterine life they descend along the posterior abdominal wall, through the inguinal canal to the scrotum. Hunter pointed out that the mechanism, whereby the testes reach the scrotum, may sometimes fail, and the organs are then arrested at some intermediate point in their path of descent. In the early embryo the testis is attached to the posterior abdominal wall by a fold of peritoneum known as the mesorchium. Through the upper part of this fold the blood vessels pass to or from the gland. Fixed to the lower end of the mesorchium is the gubernaculum, an actively growing mass of fibro-muscular tissue. The gubernaculum grows downwards and draws with it the posterior parietal peritoneum which forms a closed pouch, the processus vaginalis. At the same time the gubernaculum pulls on the testis through the intermediation of the mesorchium.

When the growing gubernacular bud approaches the groin it initiates an evagination of the strata of the anterior abdominal wall. Still anchored to the processus vaginalis and the testis, it passes through the evagination and becomes attached to the redundant pouch of integument forming the scrotum. Thus the inguinal canal, processus vaginalis, and at the discretion of the medical officer of health, (*b*) Public lectures It is suggested that public lectures be given by the medical officer of health, and others (*c*) The broadcasting of such lectures should be arranged (*d*) The general contents of leaflets have been discussed and agreed upon by the council (*e*) The coöperation of teachers to be asked in distributing advice In view of the impossibility of forecasting the extent and duration of any epidemic, it was decided to draw up no hard-and-fast scheme of propaganda, but to use the above as exigencies demanded

Drugs —Formulæ to be known as aperient, febrifuge, and expectorant have been adopted for extreme emergency use The formulæ have been so drawn as to ensure chemists having no difficulty in obtaining the necessary ingredients A suitable vaccine for use as a prophylactic in influenza should be available The Council of the Cape Western Branch concludes the memorandum by assuring the City Council of its hearty coöperation, and its willingness to discuss any further measures in which the City Council considers it may be of assistance

Organisation of Trained Nurses —Representatives of the Trained Nurses Association have reported that a list could be prepared of members who were not actually employed in hospitals or private practice, and who would be available to assist at temporary hospitals They suggest that in case of emergency it would be well if trained nurses could be allotted from the hospitals by the Cape Hospital Board as an emergency measure until such time as the other members are ready to take their place In regard to partly trained nurses (by which they meant members of the St John Ambulance Brigade, Ambulance and Nursing Divisions), lists were available, and it was proposed to ascertain further the names and addresses of those V A D 's who had returned from military service but were not attached to the St John Ambulance organisation It was also recommended that house-to-house visitation should be carried out under the control of district nurses, assisted by V A D 's and untrained voluntary helpers, and it was urged upon the Health Authorities to support an increase in the number of district nurses throughout the Peninsula

OCCUPATIONAL ANALYSIS

THE principle of vocational selection is being more and more extensively adopted by manufacturers as the most logical way of increasing the efficiency of their staff Each applicant for work, in the organisations which have adopted the principle, is subjected to a psychological test to discover the direction in which his capabilities lie, so that he may be allotted to the task for which he is most fitted The supplementary principle of vocational guidance is also gaining ground, and many local educational authorities are actively superintending their pupils' absorption into industry Both selection and guidance must, however, depend on an accurate knowledge of the available occupations in terms of the demands they make on human physique and temperament and the study of the worker has undoubtedly outstripped the study of the work Detailed psychological descriptions of industrial processes have been practically unobtainable, and advisers have either made their own researches into a few of the industries with which they were most concerned, or have relied on the very crude material which has hitherto been at their disposal The National Institute of Industrial Psychology has now for some time been experimenting with a view to meeting this demand, and in the first report [1] of their vocational section they illustrate with full instructions and specimens a scheme by which information on the myriad existing industrial processes can be standardised Given a satisfactory standard form and notation it will be comparatively easy to form a pool to which advisers will be constantly adding and from which in time everyone will be able to draw the information he wants As an illustration of their thoroughness may be taken the sample on laundry work This industry is divided into eight processes collecting, receiving, sorting washing calendering ironing, packing, and delivery Form A, a broad description of the occupation, contains general information and notes on the special features, for instance—Prospects "At eighteen or earlier the girl is given an opportunity to learn hand ironing under a skilled worker It takes a girl from one to three months to reach proficiency Some laundries have regular training schools Prospect of promotion is fair for the more skilled classes of worker, including fine ironers and machinists from whom the forewomen are recruited " Each process is described on a separate form A calender, for example, is a machine which dries and irons in one operation and of a calender feeder the following psychological qualification is demanded "Manual skill chief hand and arm movement is $t_2 f_2^{1\,2\,3}$ Se, R & L (i e thumb and first three fingers of both hands are employed in gripping , arms are bent and elbows free) Touch control Also elbow movement similar to that of press work Accuracy of large movement C Speed C+ Temperament calm equable, no objections to monotonous work Experience " Armed with this report, a vocational adviser will be able to repair to a factory or workshop and obtain exactly the information he requires in the shortest possible time, and will have a common language in which he may read the experience of any other adviser The pamphlet marks a great step forward in the application of psychological knowledge to industry

ARSENIC AND APPLES

THE following is quoted from a letter written by the Acting Secretary of the United States Department of Agriculture at Washington, in answer to a communication from the London Vegetarian Society asking whether anything is now being done by American fruit growers to prevent the contamination of apples by arsenic [Vide THE LANCET, 1926 i 824, and ii , 81]

"Intensive studies designed to control the spray residue on fruit were made during the last producing season by both Governmental and commercial agencies While a great improvement in the condition of the crop was brought about it was found that in certain areas of low rainfall even the most careful restriction in the application of sprays, followed by brushing and wiping the fruit after harvest, left excessive quantities of residue on the fruit This demonstrated clearly the necessity for employing other methods of removing spray residues than by brushing or wiping Experimental work conducted last season in a number of localities where spray residue may be excessive at the time of harvest has shown that by the employment of certain dipping methods the fruit may be cleaned to a point where the amount of residue will be well below the recognised tolerance Steps are now being taken to advise the fruit producing industry in those regions where fruit cleaning is essential, of the equipment and processes necessary in the application of these different methods and everything possible will be done to bring about the installation of this equipment before the next packing season It is expected that as a result of the combined effort of the fruit producing industry and interested governmental agencies none of the fruit exported to Great Britain during the coming season will bear objectionable quantities of spray residue"

The full text of the letter is being published in the *Vegetarian News* for April

SOLLUX PAPERS ON U V THERAPY

THE Sollux Publishing Company have issued a collection of papers by well-known German writers dealing with ultra-violet therapy Some of them have been published before and the theories advanced may not fully represent the writers' present views , as working hypotheses, however, they are still valid Dr Hans L Heusner is opposed to the view generally held in this country that U V rays are to be avoided in pulmonary tubercle An analysis of 80 replies in response to a questionnaire which he circulated convinced him that there were "practically no unfavourable results " though in many cases improvement might have been slight U V treatment in phthisis has analogies with tuberculin treatment and demands a similar degree of caution , no good can be expected from massive doses and all exposures should be under the personal supervision of the physician in charge Heusner expresses the hope that, as a result of improved U V treatment of early cases the sanatoria may be reserved for the more advanced cases with positive sputum Hugo Bach testifies to the value of U V rays from whatever source in the treatment of war wounds, particularly when septic , he describes their disinfectant, deodorising, and drying effect and attributes these properties to local stimulation as well as to a general increase of metabolism The reprint of Huldschinsky's well-known paper on U V treatment of rickets contains abundant proof of the value of the rays in combating the severe post-war rickets amongst the children of Central Europe It is perhaps going too far to suggest that every child, whether showing signs of vitamin deficiency or not should be given U V treatment in infancy as a matter of routine Of a more speculative nature are the papers by Profs G A Rost and A Jesionek After pointing out the fallacy of Finsen's original idea of a direct action of U V rays on the tubercle bacilli in lupoid tissues, Rost suggests that the effect is due to "primary " and "secondary" tissue reactions in response to the absorbed radiation In disagreement with Rollier and Jesionek, Rost is against the development of pigmentation as a desirable sign of progress under U V treatment, and while not disputing the excellent results obtained in many patients who pigment, considers that equally good or better results can be obtained without pushing dosage to the point of pigmentation, a process which he regards as a natural defence against the penetration of the U V rays Erythema, on the other hand he regards as essential to treatment and, as pigmentation is preceded in most cases by marked erythema he finds therein the explanation of the good results reported with pigmenting doses plasm. One to four spermatogonia were present in each tubule. They consisted of a very large, spherical, deeply-stained nucleus with distinct peripheral chromatin spots, and a large well-defined cell body of clear protoplasm

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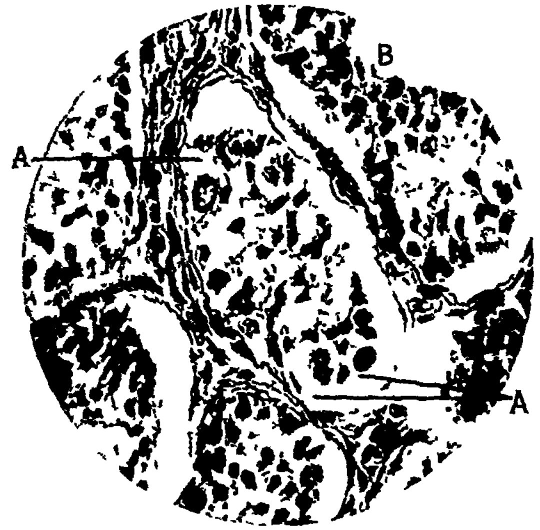
[1] Institute Report, No 1, 329, High Holborn, London, W C 2s

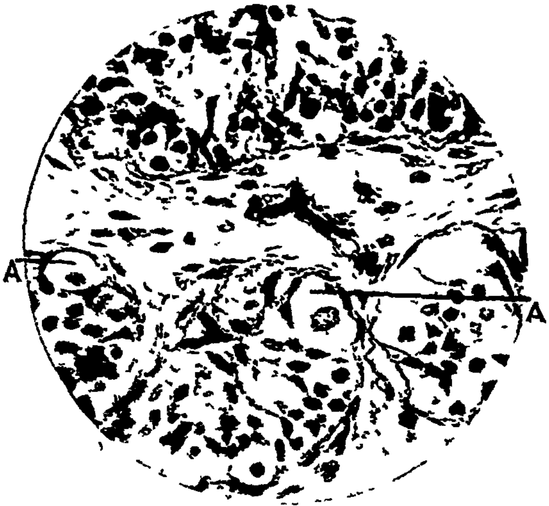
FIG 2



Section of scrotal testis, aged 10 months A, Spermatogonia B, Undifferentiated cells 23 × 400

About the tenth year a further differentiation of the undifferentiated cells occurred The nuclei appeared to have lost their innumerable chromatin spots which were replaced by one or two definite nucleoli These cells then came to resemble those described as true cells of Sertoli This differentiation continued throughout puberty and was accompanied from about the twelfth year *onwards* by mitotic changes in the spermatogonia, fully formed spermatozoa being recognised about the *fourteenth* year

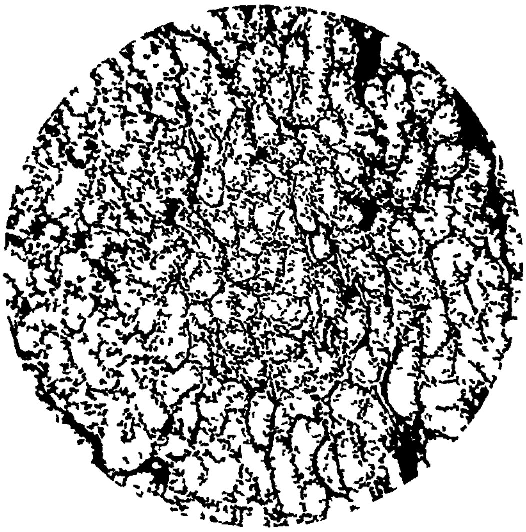
FIG 4.



Section of testis, aged 13 years, retained in lower part of inguinal canal A, Spermatogonia 3 × 400

It is significant to notice, however, that great variation occurred in the date of onset of spermatogenesis, and that in spite of adolescent age a scrotal testis frequently presented a preadolescent histological structure The interstitial cells of Leydig were found to be in large numbers during *fœtal* life and until the fourth month after birth occupying the wide intertubular intervals After that age they remained in abeyance until the twelfth year, when they reappeared in the small intertubular angles and persisted throughout puberty in what was presumably *an active condition. It* was remarkable to find that between these two ages few or no cells with any resemblance to cells of Leydig could be distinguished in the interstitial tissue.

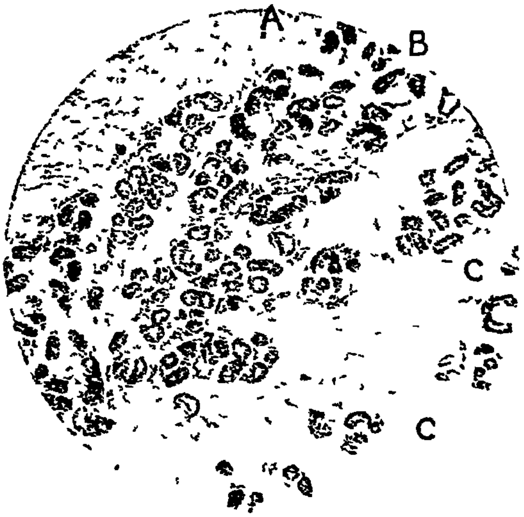
FIG 3



Section of testis, aged 14 months, retained in lower part of inguinal canal showing closely packed tubules 22 × 60

Turning now to the retained testes, mention has already been made of the variation in size. An interesting feature in these glands was the high percentage of cases presenting a wide separation of the testis and epididymis (Fig 1 (A)), but this condition was not peculiar to the retained organ

FIG 5



Section of testis, aged 13 years, retained in abdomen A, Tunica albuginea B, Peripheral tubules C, Fibrous tissue occupying centre of gland 4 × 35

Three testes examined were retained in the inguinal canal near the external abdominal ring Two of these, from children aged 14 months and 13 years respectively, lay just internal to the external ring, whilst the third, from a subject of 60 years, was situated *in* the ring which was considerably enlarged by the scrotum are formed in advance of the descending testis The subsequent shortening of the gubernaculum and its firm attachment to the bottom of the scrotum are said to be instrumental in bringing the testis into its ultimate scrotal position It must be borne in mind, however, that arrest of further growth of the gubernaculum, after becoming attached to the scrotum, together with normal growth of surrounding structures, is more likely to account for the pulling of the testis into the scrotum.

The Function of the Testis.

It has long been known that the testis has a dual function Primarily it is a spermatogenetic organ, but it is also responsible for the development of the secondary sexual characteristics Hunter, in 1786, showed that the male sexual characters were independent of the production of spermatozoa, and that the development of the former was prevented by removal of the testes It is still undecided which element of the testis is responsible for the development of characteristic sexual changes The older, and perhaps more general opinion, is that the interstitial cells of Leydig produce an internal secretion which initiates the sexual changes at puberty It is significant that the onset of these changes is coincident with the reappearance of large numbers of cells of Leydig.

Recently it has been urged by Kenneth Walker that the spermatogenous cells produce the internal secretion He believes that the interstitial cells are merely trophic in their function, and furnish the tubular cells with nutritive material.

Pathology of Retained Testis.

In reviewing the older literature it was found that the retained testis was almost invariably described as abnormal in structure, and more or less useless to the individual so far as spermatogenesis was concerned Hunter stated emphatically that the retained gland was structurally imperfect, and he has received much influential support On the other hand, Curling, some 50 years after Hunter, concluded that the retained organ was not malformed originally, but was normal until puberty. Other workers, confining their studies to the retained testis in childhood, came to similar conclusions. Recently great interest has centred round the part played by the scrotum in spermatogenesis. It seems to have been proved conclusively by the researches of Crewe, Fukui, and Moore that the lower temperature of the scrotum is the essential factor for natural and complete spermatogenesis

Table I.—*Sizes of Scrotal and Retained Testes*

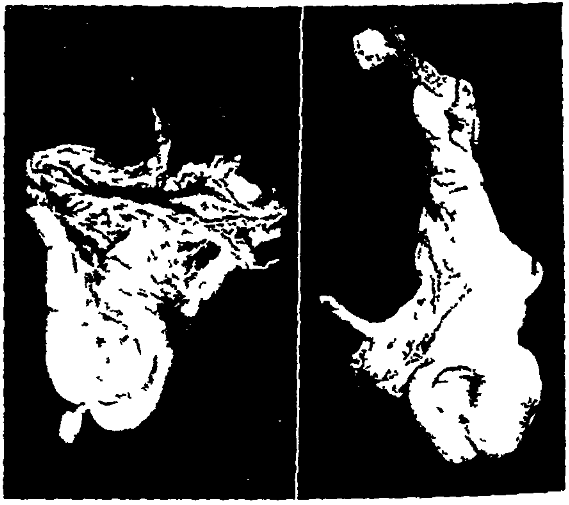
Scrotal.		Retained	
Age	L B T	Age	L B T
12 m	1 6 ×0 75 ×0 65	14 m	1 3 ×1·0 ×0 7
2 yrs	1 5 ×1 0 ×0 8	2½ yrs	1 1 ×0 75 ×0 6
3½ „	1 45 ×0 95 ×0 7	4 „	1 5 ×1 1 ×0 5
8½ „	1 7 ×1 0 ×1 0	6 „	1 8 ×1 2 ×0 8*
13 „	2 0 ×1 45 ×1 2	13 „	2 3 ×1 4 ×1 2
		13 „	3 2 ×2 4 ×1 7*
17 „	2 5 ×1 65 ×1 5	15 „	2 7 ×2 4 ×1 4*

L = Length Upper to lower pole
B = Breadth Anterior to posterior margins
T = Thickness Right to left surface
All measurements in centimetres
* Testes retained in abdomen m = months, yrs = years

The present investigation was undertaken in order to compare the structure of the retained and scrotal testes in children of the same age, and to see what changes occurred in the former organs as age increased Ten retained testes were obtained by operative procedure from children of varying ages and two from adults Each was a unilateral cryptorchid, and controls of similar age and of corresponding sides were procured from autopsies The dimensions were taken after fixation and are shown in the accompanying table (Table I) It will be seen that the size of the retained testis was very variable Those situated near the internal abdominal ring were usually smaller than the scrotal organ of the same age It is interesting to note that those glands arrested in the abdomen were invariably larger than the normal ones of that age, whilst those situated in the lower part of the inguinal canal were similar in size to the corresponding scrotal organ

It is proposed to describe briefly the gross and minute anatomy of the scrotal testis during childhood and adolescence, and afterwards to consider the retained organs and compare them with their controls. The scrotal testis at birth was of small size, but increased rapidly during the first few years Between the fifth and eighth years growth was apparently slower, but towards puberty advanced until adult dimensions were attained At first the epididymis and testis were of equal size in section, but later the growth of the former was slower, so that it was subsequently smaller than the testis

Fig. 1.



A, Testis retained in lower part of inguinal canal, aged 14 months B, Scrotal testis, aged 4 months In both cases the digital fossa is open and a vas aberrans is present

The relation of the epididymis to the testis was variable Usually the two structures were in apposition, but in a small percentage of cases they were separated by a digital fossa of variable width (Fig. 1 (B)) In nearly all those glands where the digital fossa remained open a stalked appendage was suspended from the lower pole of the testis This was the vas aberrans—a remnant of the Wolffian body, and in all cases was composed of vascular, cellular, fibrous tissue The parenchyma of the testis in early life consisted of small closed tubules isolated by delicate immature connective tissue Towards the end of the first year the tubules became closely packed, a minimum amount of fibrous tissue separating them. This condition prevailed except at two periods—during the second and third years, and between the ninth and eleventh years, when the tubules were again isolated by delicate stroma After this period the tubules increased greatly in size and were in close contact, being separated only by their basement membranes Except at the earliest ages the tubules all presented a central lumen, the tubular cells being arranged in rows within the surrounding fibrous basement membrane From fœtal life until the tenth year the tubules contained only two types of cells—undifferentiated cells and spermatogonia (Fig 2) The former were characterised by a pale, oval nucleus with irregularly arranged chromatin spots, surrounded by an ill-defined syncytial mass of vacuolated protowill be the tubular epithelium." Crew, working on the retained testes in horses, indicates that the further a testis lies from its normal position, the more abnormal are its appearance and histological structure. Crew, Fukui and Moore have recently urged that the presence of the testis in the scrotum is necessary for complete spermatogenesis. According to these workers the lower temperature of the scrotum is the essential factor. Keith, however, believes that the scrotal testis is relieved from the pressure in the abdomen exerted by the diaphragm.

2. At whatever position the testis is arrested, and at whatever pre-adolescent age it is examined, the essential elements of the gland—spermatogonia and undifferentiated cells—are. if not in all parts, certainly in many areas identical in position. structure, and relationship with those of the corresponding scrotal organ. This conclusion is comparable with that of Curling and his supporters, all of whom have described a healthy condition of the retained testis in childhood.

3 *The younger the age at which a retained testis is examined, the more are the normal appearances and characteristics found.* It may be stated conclusively that until puberty, the tubular cells retain their healthy pre-adolescent characters despite any reduction in the amount of parenchyma. After that time degenerative changes may occur which are more marked where a higher degree of retention prevails It may be added with confidence that a retained testis develops normally during the early part of postnatal life, but later. if it remains in its abnormal position, then and then only does it undergo retrogressive changes.

4 Certain changes are found to occur in the retained testis. They are recognisable as puberty approaches, and are most marked in the testes arrested in the abdomen or in the higher parts of the inguinal canal (1) The earliest change is the appearance of fibrous tissue which at first is of a primitive cellular nature. but later may become fibrosed. (2) There is an "apparent" disappearance of the tubules. due either to the failure of the gland to form new ones, or to the increase in the stroma causing a wider separation of those present (3) Later there is an "actual" disappearance of the tubules which may result from the advancing fibrosis (4) At puberty there is a persistence of the quiescent state of the nuclei of the spermatogonia

5 Throughout pre-adolescent life the undifferentiated tubular cells retain their vitality. and, as in the scrotal organ, undergo further specialisation into cells of Sertoli These are regarded as the nutritive elements of the spermatogenetic cells. It is remarkable to find that the cells of Sertoli are very resistant to the continuance of the malposition. and are typical even in adult life. Since the cells of Sertoli persist in retained testes it seems reasonable to suppose that they are trying to preserve the healthy condition of the germ cells. If, by the time puberty is reached. the testis is still misplaced, the cells of Sertoli seem to be incapable of preventing atrophic changes in the spermatogenous cells Should such a testis acquire its normal scrotal position prior to puberty. then the cells of Sertoli will be ready to continue their function of nourishing the germinal cells

6. The interstitial cells of Leydig are apparently not influenced by the abnormal situation of a retained testis As in scrotal glands they are in abeyance during early childhood and present and of typical appearance at puberty. and in the adult As far as could be judged they appeared to be in similar numbers in the scrotal and retained organs. The explanation of the apparent exaggeration so frequently described seems to be that they become more obvious because the tubules are less numerous or more widely separated.

7. In no cases of retained testis examined was there anything of an abnormal nature in the size or structure of the epididymis The only diversion was that more frequently in the retained testis the *epididymis* and testis were separated by a digital fossa of variable width but a similar condition was observed in some scrotal testes

THE FUNCTION OF THE RETAINED TESTIS

It is now generally agreed that double cryptorchidism in both man and animals is associated with aspermatogenesis, but the elaboration of the internal secretion responsible for the production of the secondary sexual characters is complete Great interest has centred round this aspect of the subject, and much valuable research work has been carried out. Hunter considered that the absence of spermatogenesis was due to the imperfect development of the retained testis and Bland-Sutton supports this view. Curling concluded that the testis was normal in form and structure until puberty, when further evolution ceased. Murdoch was of the opinion that the retained testis acquired its mature structure at puberty, but later underwent atrophy owing to its faulty position.

After careful histological examination of the retained testis and comparison with the scrotal gland. it is suggested that the abnormal changes are secondary. It is surmised that the retained testis develops normally during early postnatal life. but later if it does not reach the scrotum, it undergoes retrogressive changes

In some animals the testes are normally situated within the abdomen and only pass into the scrotum during the breeding season. when the process of spermatogenesis is active After this period the glands are withdrawn into the abdomen by the cremaster muscle, shrink to half their size, and are said to resemble the retained testis in man. In these mammals the testes are only spermatic when in the scrotum, the lowermost point of their descent In man the glands have come to reside permanently in the scrotum, and. as in those mammals where intermittent descent takes place, only acquire their full development and function when they reach the terminal point of their destined course.

It becomes evident. then that the functional activity of the testis depends upon its anatomical situation Since the position in the scrotum is essential. it is justifiable to surmise that retained organs may complete their development if placed by operative procedure into the scrotum before they are seriously compromised.

TREATMENT.

Owing to the frequently unsatisfactory results following surgical intervention in these cases, surgeons sometimes postpone operation in the hope that descent of the testis will occur naturally Spontaneous descent however. is not common after the first three years of life and this form of treatment is to be discouraged In view of the complications associated with retention of the testis, the treatment becomes a matter of considerable importance The testis in the inguinal canal is exposed to pressure from the contraction of the abdominal muscles. causing pain, inflammation, and subsequent fibrosis. Hernia is usually associated with retained testis and the risks of torsion and malignant disease are not to be ignored. It appears only logical to preserve an organ which is of such great importance to the human economy. and every effort should be made to place the testis in surroundings favourable for its protection and maturation Whilst freely admitting that it is as yet uncertain whether a testis which has been transplanted into the scrotum will develop and function normally. it is believed that if this can be done in early life without injury to the structures concerned there is a reasonable prospect that the organ will become efficient Even if the dual rôle of the testis is not acquired, the gland should never be sacrificed owing to its power of producing the internal secretion on which depends the development of the male characters Furthermore, its presence in the scrotum will be a source of satisfaction to the sensitive individual. whilst it is always desirable to restore conditions to normal if it be possible without undue risk.

Apparently the retained testis is more liable than the normally placed organ to undergo malignant degeneration In a series of 45 cases of malignant accompanying hernia The retained testis at 14 months (Fig 3) was, histologically, practically identical with the scrotal organs from children aged 10, 11, and 12 months The surrounding tunica albuginea was of similar width, the tubules were all closely packed and of equal size, and contained healthy undifferentiated cells and spermatogonia The interstitial tissue was of a fibrous nature, and the basement membranes fully formed Interstitial cells of Leydig were in abeyance as in scrotal glands of this period

One histological feature alone distinguished this retained gland from corresponding scrotal organs, and that was a slight thickening of the fibrous interstitial tissue in the centre of the organ In consequence it was assumed, by careful comparison between this retained testis and the normal ones, that the parenchyma of the former was healthy, but its development was slightly retarded, in other words, the gland, during 14 months, had attained the condition of a scrotal organ of under one year.

The retained testis at the thirteenth year was equal in size to normal testes of this age The tubules were numerous and fairly closely packed, and similar in size to those of a completely descended testis at the twelfth year The basement membranes were fibrous, but cellular stroma occupied the small intertubular intervals Differentiation of the undifferentiated cells was proceeding as in normal testes, and characteristic cells of Sertoli were recognisable. The spermatogonia (Fig 4), however, although numerous, were still in the resting condition as far as spermatogenesis was concerned It is concluded therefore that this testis was healthy, but in a pre-adolescent condition, its development again having been retarded. It must be added, however, that a similar condition was found in a scrotal testis of 13 years where the tubules were small, and contained simple, resting spermatogonia and specialised undifferentiated cells The cells of Leydig were similar in appearance and numbers in both testes

It is interesting to record that the testis arrested in the external abdominal ring in a man of 60 years contained some degenerated tubules and many active ones The latter showed complete spermatogenesis, even to the formation of spermatozoa

Two testes from children aged 4½ years, and one from a child of 2½ years, retained in the higher parts of the inguinal canal, were smaller than the corresponding scrotal organs In both cases the tubules were separated, cellular stroma occupying the intervening spaces At the earlier age they were irregularly scattered, a group of tubules alternating with a mass of stroma ; at the later age they were more evenly distributed The tubular cells were of two types, undifferentiated cells and spermatogonia On the whole, the latter were less frequent than in the fully descended organs of this period Cells of Leydig were in abeyance as in the normal testes

In comparison, then, with scrotal glands of this age there appeared again some retardation of development, with possibly actual reduction of the parenchyma The glandular elements present, however, were in a healthy condition In these cases it is to be observed that a more marked arrest of development was associated with a higher degree of retention Two testes arrested at the internal abdominal ring in children aged 4 and 5 years were examined. At the former age the gland was characterised by a progressive fibrosis which apparently had commenced posteriorly at the mediastinum testis and spread towards the anterior margin, where cellular stroma was still recognisable At five years the intertubular tissue was of a cellular nature In both cases the tubules were smaller than in the corresponding scrotal glands, and they were isolated and evenly scattered They contained simple, undifferentiated cells, and two or more spermatogonia Compared with scrotal testes at the fifth year it appeared that in these two retained organs there was an appreciable arrest of development, the number of tubules being smaller than in the healthy organ, and their isolation in marked contrast with the closely packed arrangement in the fully descended gland But again the tubular elements, though collectively reduced in amount, were of characteristic appearance and structure

In considering the glands arrested in the abdomen, from children aged 6, 13, and 15 years, the large size of these organs was very striking On examination this was found to be accounted for by a predominance of fibrous tissue, and not by an overabundance of parenchyma In each case the testis and epididymis were separated by an extraordinary wide digital fossa, and in those of 6 and 13 years a large, stalked vas aberrans was present The tubules in the glands of 6 and 15 years were evenly distributed, but isolated by delicate cellular connective tissue. At the thirteenth year the tubules were considerably reduced in size and number, and were confined to the region adjacent to the tunica albuginea (Fig 5) The greatest part of this organ consisted of dense fibrous tissue The contents of the tubes in the gland at 6 years appeared to be in a healthy condition. Typical undifferentiated cells and spermatogonia were present, although the latter were far less frequent than in the corresponding scrotal organ At the thirteenth year the parenchyma was extensively reduced. Only a few spermatogonia were recognised, specialised undifferentiated cells filling the tubes In the retained testis at 15 years the tubular cells were in many cases degenerated, but many typical cells of Sertoli were seen, and an occasional spermatogonium could be distinguished Cells of Leydig were not observed in the testis at the sixth year, but in the others they were characteristic and occupied only the intertubular intervals It appeared, therefore, that abdominal retained testes were subjected to an invasion of fibrous tissue, accompanied by different degrees of degeneration and disappearance of the tubules. It is impossible to say whether the fibrosis was a primary change causing retrogression of the tubular elements or whether it was secondary, replacing the already compromised parenchyma

It is interesting to include in this series a small body removed along with a hernial sac from the inguinal canal of a human hermaphrodite of 38 years It consisted of small tubules isolated by vascular, fibrous tissue and masses of cells of Leydig In the half dozen sections available, the tubular cells were seen to be mostly typical cells of Sertoli, but two spermatogonia were recognised, one characteristic of the resting condition, and the other presenting a state of nuclear activity.

After a careful comparison of the retained testis and scrotal organ in children at different ages and in different situations, it seems justifiable to draw the following conclusions —

1 *The further the pre-adolescent testis has descended in its normal route the more closely does it correspond to the scrotal gland of the same age* It has been shown that two testes arrested in the lower part of the inguinal canal in children aged 14 months and 13 years were similar to scrotal glands of the same age, others retained in the upper part of the canal showed a reduction in the amount of glandular parenchyma, but a healthy condition of the existing essential elements Glands arrested in the abdomen were affected by different degrees of fibrosis and a greater reduction in the germinal elements, but amongst those persisting, healthy forms could be distinguished A testis found in the external abdominal ring in a man of 60 years showed complete spermatogenesis in parts Hunter believed that an abdominal retained testis was more imperfect than one late in getting into the scrotum ; whilst Bland-Sutton is of the opinion that a healthy testis is never found in the inguinal canal

Recently Moore has carried out experimental elevation of the testes in animals, and later has replaced these glands into the scrotum He finds that “ the more nearly the testis so treated returns to its normal scrotal position, the more nearly normal

The vas deferens usually offers no difficulty in transplanting the gland, and the spermatic cord can generally be sufficiently lengthened by dividing the fascial and muscular bands, which are the chief obstacles in bringing down the testis

In cases where the blood-vessels of the cord appeared too short, Bevan of Chicago, in 1898 proposed that additional length could be secured by ligaturing and dividing one or more of the spermatic vessels He considered that the vessels to the vas were sufficient to nourish the testis This method has the disadvantage that it may be followed by atrophy of the testis and is not to be recommended except as a last resort.

Technique of the Operation.

The chief stages in the operation that we have adopted are carried out as follows The skin incision is made just above Poupart's ligament and exposes the whole length of the inguinal canal. The external oblique aponeurosis is divided and the spermatic cord and hernial sac then identified. The sac is separated from the cord near the internal ring, transfixed, ligatured and cut across when the stump will slide out of view under the fibres of the internal oblique muscle. This completes the first stage of the operation The fundus of the sac is now drawn up and freed from its attachment to the bottom of the scrotum. The testis is thus mobilised and can be drawn out of the wound. It is handled as little as possible during this and subsequent manœuvres The constituents of the cord are next separated with the utmost care. and all fascial and muscular bands stripped up to the internal ring the cord being put on the stretch. This is a somewhat tedious performance, but is of the utmost importance The testis finally is held only by the vas and spermatic vessels, and the latter are traced by the finger into the retroperitoneal tissue towards their origin from the aorta and separated from surrounding structures Similarly, the vas is followed down into the pelvis and further mobilised The cord having been sufficiently lengthened by these manipulations to enable the testis to be placed in the scrotum without tension, the organ is laid in its new position after a bed has been prepared there for it with the finger A mattress suture previously passed through the remains of the gubernaculum and tunica vaginalis below the testis is tied over rubber tubing outside the scrotum This anchors the testis into its pouch. There should be no tension on this suture which merely steadies the testis for a time in its new position. The wound is then closed and the patient remains in bed for three weeks.

The operation is one which requires considerable care and patience in its performance, owing to the delicacy of the structures concerned If sufficient length of the cord can be obtained after the testis has been freed from the hernial sac and all the fascial bands divided the final result is generally satisfactory. Handling of the testis must be avoided if possible to prevent injury and postoperative swelling and perhaps subsequent atrophy. In bilateral cases an interval of several months is allowed to elapse so that the result of the first operation can be ascertained before the second is undertaken If the first operation prove successful, the second testis is brought down; if it fail, it may be wiser to leave the testis alone

When the testis can be transplanted into the scrotum with its blood-supply intact and not under tension the organ will remain there and develop satisfactorily An operation is considered to be an anatomical success when the testis maintains its position in the scrotum and hangs freely without adhesions around it The organ must be of normal consistence and continue to grow as the age of the child increases The actual height at which the testis lies in the scrotum is of no great importance, for normally one organ lies at a higher level than the other If the testis feels hard and small, fibrosis has taken place and the operation must be regarded as a failure.

OPERATIVE RESULTS.

During the past five years 50 cases of inguinal retention of the testis have been treated by placing the testis in the scrotum. In 38 cases, one side only was concerned, whilst in 6 cases both sides were submitted to operation. The ages of the children varied from 3 to 14 years, the average being 7 years All these cases have been carefully followed up, and the time that has elapsed since operation was performed varies from 1 to 5 years. The results are shown in Table II. Thirty-six cases gave good anatomical results, 14 were failures Two cases occurred in twins and in both brothers a retained testis, accompanied by a hernial sac, was found on the right side.

TABLE II.—*Operative Statistics*

I *Preoperative Data*

Number of patients	44
Testes operated upon	50
Involving right side	21
Involving left side	17
Bilateral cases	6
Age at operation	3–14 years.
Average	7 "
Position of retained testis—inguinal retention	

II. *Postoperative Data.*

End-results in 50 cases of retained testis	
A. *Successful*: 36 cases.	
Testis free in scrotum. Normal size and consistency	72 %
B. *Failures*: 14 cases	
Testis retracted and/or atrophic	28 %
C *Bilateral cases*	
(1) Both testes in scrotum in 3 cases.	
(2) One testis in scrotum in 3 cases.	
D *Hernia present in 46 cases*	92 %
Spermatic vessels divided in 4 cases	
Atrophy of testes in all 4 cases	100 %
Mortality	Nil

The operation as described has proved satisfactory (Figs 6 and 7) and there has been no mortality in the series

CONCLUSIONS

In conclusion, it appears justifiable to advocate the transplantation of the inguinal retained testis into the scrotum during the first years of life.

As a result of a careful histological investigation the retained testis has been found to be very similar to the scrotal organ in early childhood

Good results after operative treatment are not exceptional, and there is a reasonable prospect that the transplanted testis will acquire the spermatogenetic function at puberty, provided the organ be placed in the scrotum before morbid changes have occurred The presence of a living testis in the scrotum in a considerable percentage of cases justifies the performance of the operation. It must be added, however, that as yet there has been no mortality in the series quoted and consequently no histological confirmation of spermatogenesis in the transplanted organ

We wish to express our sincere thanks to Prof J. S. B. Stopford in whose department much of the work was carried out, for his help, advice and kindly criticism We also wish to thank Sister M. McMurtrey for her assistance in collecting the cases after operation, Mr. A Teesdale and Mr. H Gooding for the excellent photographs of the patients and specimens.

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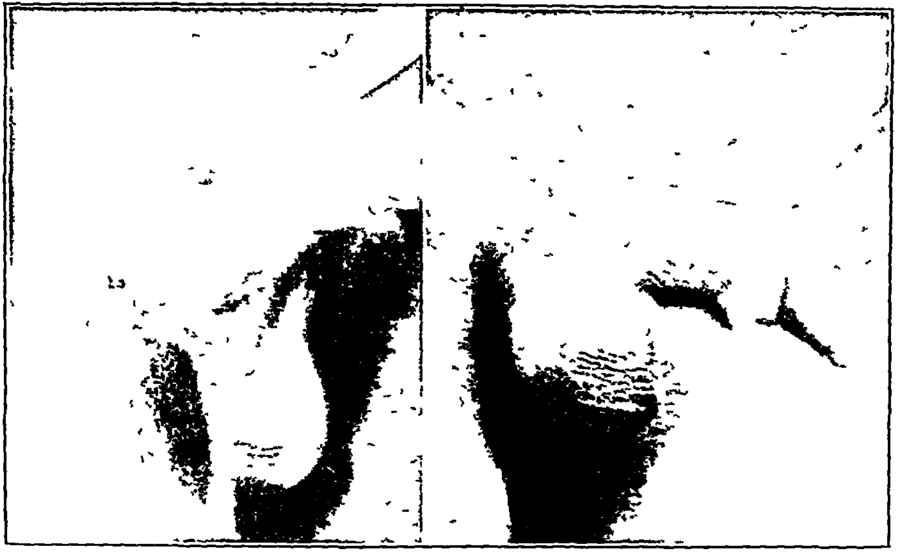
(*Continued at foot of next page*)

testicular tumours collected from the Manchester Hospitals, over a period of 15 years, seven cases occurred in the retained testis Dew, in reviewing the published figures, comes to the conclusion that malignancy is relatively more frequent in the abnormally placed testis, though this tendency has probably been exaggerated This complication is rare in childhood, and operation in early life should therefore help to lessen its occurrence in later years

The adoption of traction and gentle massage of the testis in an attempt to encourage its spontaneous descent during the first years of life will not endanger its future development The wearing of a truss must be strongly discouraged, for whilst it may control the accompanying hernia, the pressure on the testis leads to attacks of inflammation and subsequent fibrosis of the gland Hunter realised this danger when he wrote, "the surgeon who is employed should be very attentive that no inconvenience is produced by the truss"

FIG 6 FIG 7.



CASE 1 —Right inguinal retained testis and hernia

Before operation After operation

In several cases where testicular gland or thyroid extract has been employed no beneficial results have followed If the testis does not reach the scrotum by the third year of life, the chances of it coming down unaided are remote

If, then, the testis has not reached the scrotum by the age of three years, that is the time of election for operative treatment to be carried out After this age the gland is subjected to retrogressive changes in the parenchyma and sometimes a progressive fibrosis If it be placed in the scrotum at this early age it is believed that the degenerative changes will be prevented, normal development may occur, and the power of procreation be preserved The anatomical structures are sufficiently well developed at the third year to warrant easy recognition and so prevent injury. Little is to be gained by delaying operation after this period, for as the age of the individual increases, the chances of success following operation decrease, owing to the morbid changes becoming more pronounced

Indications for Operation—In deciding which cases are suitable for operation it will be remembered that the retained testis may be found in three positions (1) abdominal or iliac, where it lies proximal to the internal abdominal ring and cannot be detected on palpation; (2) inguinal, where it is arrested within the inguinal canal; and (3) high scrotal, where the testis has passed just outside the external abdominal ring.

Cases of iliac retention, which are the least common type, are not, in our opinion, suitable for transplantation to the scrotum as a general rule The vessels are so short that it is only possible to bring these testes down after their division, and this often results in atrophy of the organ The vas itself, after repeated observations, does not appear to be correspondingly shortened When unilateral, these cases should be left alone unless complications require interference If both sides are affected, it is justifiable to try to bring one testis down into the scrotum If the operation succeed it affords the patient a chance of fertility, if it fail, and the organ undergoes fibrosis, the remaining testis will furnish the internal secretion necessary for the individual's future development

In the high scrotal group, where the testis has escaped just outside the external abdominal ring, operation is rarely necessary Such a testis has been seen to develop normally and should be left untouched unless an accompanying hernia requires treatment Testes in this situation may undergo spontaneous descent into the scrotum as the child grows and a hernial sac is often absent It may be advisable to keep such cases under observation until descent is complete The inguinal group comprises the largest number of cases, and all should receive operative treatment—namely, *transplantation of the testis into the scrotum.*

Briefly, all cases where the organ is palpable in the inguinal canal should be submitted to operative treatment

OPERATIVE TREATMENT.

In the operative treatment of this condition three different procedures are available —

(1) The testis may be excised Removal of the testis in a child is to be strongly condemned unless some serious complication intervenes The objection to removing the organ is that even though it may be of little spermatic value, the presence of the internal secretion may justify its retention

(2) *The testis may be replaced in the abdomen* This procedure is advocated by Pannett in view of the large number of failures following scrotal transplantation This operation offers little hope of the development of the spermatogenetic function and exposes the testis to the risk of malignant degeneration It is said, however, that the danger of malignant disease is less when the testis lies in the abdomen than in the inguinal canal. Abdominal replacement should only be carried out when the testis cannot be brought into the scrotum

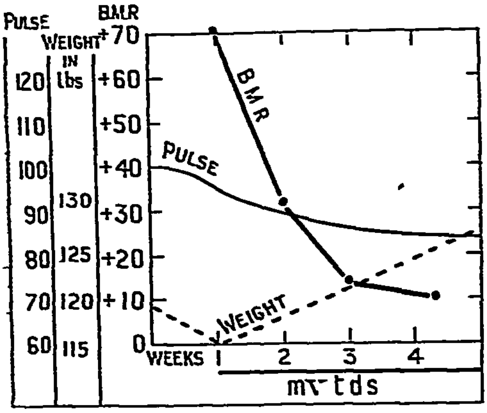
(3) The testis may be transplanted into the scrotum This is the ideal operation and places the organ in its natural position, and gives it a chance of developing its full functions

The cases in this series have all been treated by bringing the retained testis down into the scrotum and placing it in a bed that has been prepared to receive it

If the operation is to be successful the blood-supply of the testis must not be interfered with, as this will endanger its vitality and subsequent growth Further, the testis must be placed in the scrotum without tension, otherwise retraction will certainly take place

In estimating the basal metabolic rate the samples of air for analysis were collected by the Douglas bag method This was done in a large general ward, but although screens were used to cut off outside excitements as far as possible, the conditions were not ideal. The patients had no food for 12 hours before the test.

FIG 2.



CASE 2 —Severe exophthalmic goitre Female aged 31.

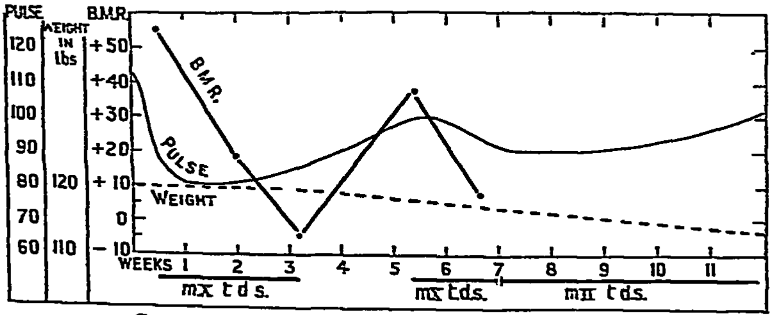
Dosage and Duration of Treatment

Five or ten minims of Lugol's solution (an aqueous solution of 5 per cent iodine and 10 per cent potassium iodide) were given three times a day during treatment. The larger dose was given at the beginning of treatment, but never for longer than six weeks, and usually for a shorter time. The duration of treatment and dosage is given in the table opposite. In most cases 5 minims three times a day seemed a safe and efficient dose to be continued without remission for several months, and this was given also to out-patients with benefit and no ill-effects

Results of Treatment

1. *Effect on Symptoms and Physical Signs*—During the first few weeks the subjective symptoms of palpitation, nervousness, heat, and gastro-intestinal discomfort were greatly diminished or disappeared entirely. The pulse became slower, the tremor less, and the patients were cooler, more composed, and slept better The maximum improvement was reached after from ten days to six weeks continuous iodine After a few weeks the exophthalmos was usually less and the gain in weight had begun If iodine was continued after this period the response varied in different patients Some relapsed slowly but the disease did not reach its former severity while they continued to take iodine, others remained stationary in a greatly improved condition Three cases showed no tendency to relapse after continuous treatment for five months, but these all retained signs of mild hyperthyroidism although the basal metabolism remained normal in two of them

FIG 3.



CASE 7 —Severe exophthalmic goitre. Female aged 23

2 *Effect on Body-weight*—Most cases showed a steady increase in weight after the first week. In this series 14 out of 19 gained weight while taking iodine Case 12 was kept at rest in bed for four weeks without treatment and lost 7 pounds She was then given iodine for 12 weeks and steadily gained 17 pounds The gain in weight did not always synchronise with a fall in basal metabolic rate In Case 12, again, while iodine was given for 12 days the weight increased slightly and the basal metabolic rate fell from +70 3 per cent. to — 1 per cent. During the next two months the basal metabolic rate rose from — 1 per cent to + 60 per cent., and there was a gain in weight of 13 pounds. In Case 1 the basal metabolic rate fell from — 65 per cent to + 5 per cent in 11 days and the weight increased by 2 pounds Iodine was continued for the next three months and during this time the basal metabolic rate rose again to + 46 per cent, and the weight increased 24 pounds In most instances, however, a fall in basal metabolic rate is accompanied by a rise in weight

TABLE I.—*Showing the Effect of Lugol's Iodine on the Basal Metabolic Rate in Cases of Exophthalmic Goitre.*

Case No	Dose of lugol.	Time.	B M.R. per cent.		Subsequent progress
			Before	After	
	t d s.		%	%	
1	♏x.	10 days	—60 5	— 5 5	Lugol ♏v. t.d.s 4 mths B M.R.—46 %.
2	♏v	3 wks	+70 7	+10	Lugol ♏v. t.d.s 5 mths B M.R.—17 %
3	♏v	6 wks	+39	+29	Lugol ♏v t d.s. 6 mths. B.M.R.+21 %
5	♏v.	9 mths.	High		Lugol ♏v t d.s 9 mths B M.R.—15 %
6	♏x.	2 wks	+37 1	—10 4	Developed mental symptoms and discharged himself
7	♏x.	2 wks	+54	—4 3	Lugol continued but slight relapse Op
8	♏x.	2 wks	—32	— 1	No further lugol. Op.
9	♏v	1 wk.	+42	+ 6	No further lugol Op.
10	♏v	10 days	+49	+36	Failed to react Op
11	♏x.	6 wks	—67	— 8	No further lugol Op
12	♏x.	2 wks	—703	— 1	Lugol ♏v t.d.s. 7 wks. more B M.R.—60 %
13	♏v	3 wks	+38	— 3	Lugol ♏v -x. 4 wks more B M.R.—13 % Operation.
14	♏v	10 days	+56	— 3	Not followed up
15	♏v	5 „	—50 8	— 8 3	Operation.
16	♏v.	8 wks	+22	—17 7	Operation.
17	♏ii.	3 mths	—39	+ 3 2	Operation before lugol treatment.
18	♏x	12 days	—37	—10 8	Lugol ♏x. t.d.s 3 wks more B.M.R.—14 % Slight relapse Op

B M.R. = Basal metabolic rate Op = Operation.

CASE 4—Aged 6. B M.R. not estimated, but great clinical improvement on ♏i.—♏ii. t d.s for ten weeks.

The five cases who lost weight did not do so well in other ways as those who gained. Three relapsed quickly after moderate initial improvement, one failed to improve at all, and the fifth improved clinically for a fortnight, and then developed acute mental symptoms It appears to be a useful working rule that patients who fail to gain weight without apparent additional cause during the first few weeks of treatment will not react well in other ways and no very sustained improvement may be expected even if iodine is continued

3 *Effect on basal metabolic rate* is shown in Table I

THE USE OF LUGOL'S IODINE IN EXOPHTHALMIC GOITRE.

BY L B COLE, M D. CAMB, M R C.P LOND,
RESIDENT ASSISTANT PHYSICIAN TO ST THOMAS'S HOSPITAL.

A STUDY of the effect of iodine in exophthalmic goitre is of interest from two points of view In the first place, it is important for the clinician to know its exact value in treatment and to what extent different types of the disease will respond. In the second, since iodine does cause a change in the metabolism, it is possible that a study of this effect may lead to a clearer understanding of exophthalmic goitre and throw light on its causation.

Historical Summary

The use of iodine by the mouth in hyperthyroidism was for many years taboo This was largely the result of Kocher's [1] observations on the treatment of simple goitre with iodine He showed that the firmer and more nodular types thus treated quickly developed hyperthyroidism and he condemned its use both in adenomata with hyperthyroidism and in true Graves's disease This condemnation persisted until a few years ago and still lingers

Marine and Lenhart,[2] however, and later Neisser [3] treated cases of Graves's disease with small doses of potassium iodide with very encouraging results, and in 1921 Loewi and Zondek[4] confirmed these observations Further, in three cases they estimated the oxygen consumption after iodine treatment and found that it was reduced to normal

Iodine then began to be used extensively in America as a preparation for partial thyroidectomy in exophthalmic goitre Plummer and Boothby [5 6] gave it in the form of Lugol's solution to 600 cases Ten minims were given daily for a few days to a fortnight before operation and in very severe cases the dose was increased In 40 careful observations of the clinical condition and basal metabolism were recorded The results were highly satisfactory, for they found that two-thirds of those treated were greatly benefited In these the nervous and gastro-intestinal symptoms disappeared in a few days, the pulse was slowed, the signs grew less, and the basal metabolic rate was reduced to normal The most striking and definite results were obtained in the most severe cases In the remaining third the results were less good, but very few failed to improve They emphasised the value of iodine before operation in reducing the surgical mortality and commented on the fact that the only surgical death from exophthalmic goitre that occurred in seven consecutive months at the Mayo Clinic was the only case to which lugol had not been given at the time of operation They considered that iodine should with few exceptions be used only as a temporary measure to bring the patient into a safe condition for surgical treatment

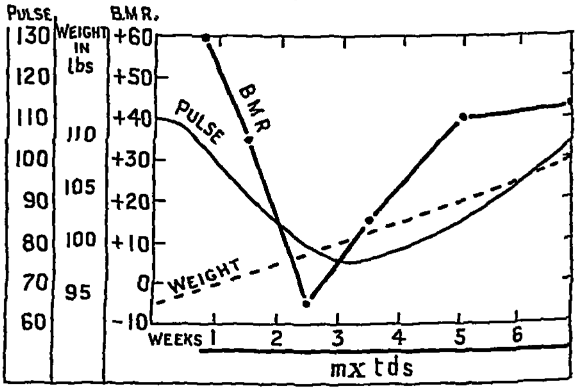
Sturgis and Greene [7] studied two series of cases, to one of which lugol was given before operation They showed that when the basal metabolism was reduced to normal with lugol before operation the loss of weight after operation was slight or there was an actual gain The untreated cases all lost a great deal of weight

Reinhoff [8] examined the histological changes in the thyroid gland after lugol treatment, and showed that the clinical improvement and lowered rate of metabolism are directly associated with the change from the typical histological picture of exophthalmic goitre to a resting colloid state He concluded that an artificial remission of the disease was produced by iodine This, he thought, is probably what also takes place during a normal remission of the disease and possibly explains the confusing histological appearances that have been described

In England iodine has only been used in exophthalmic goitre during the last few years At a discussion on the treatment of exophthalmic goitre in 1922 iodine was vetoed as dangerous for those who showed any signs of hyperthyroidism Only one speaker, Prof David Drummond,[9] said that he was accustomed to give potassium iodide in small doses to these patients, often with considerable benefit

Dr R Fraser [10] used iodine at St Bartholomew's Hospital His results agreed with those of workers in America as to its striking initial effect He found that the improvement did not as a rule persist, and cessation of iodine was followed by immediate relapse The iodine was given in the form of a 10 per cent solution in alcohol and the optimum dosage at the onset of treatment was found to be 15 minims a day, though this was reduced to 3–6 minims daily as soon as the initial improvement had taken place. Too large a dosage made the patient worse instead of better

FIG. 1



CASE 1 —Severe exophthalmic goitre Female aged 21

S J Cowell and E Mellanby observed the effect of iodine in the form of potassium iodide on eight cases of exophthalmic goitre, and their observations agreed with those of previous workers. They found no grounds for regarding iodine treatment as curative, but considered it a valuable adjunct to previous medical and surgical treatment, and suggested that the optimum dosage might be found to be in the region of one-tenth of a grain of potassium iodide daily for the majority of cases

The Present Investigation

In the series to be described, Lugol's iodine was given to 19 cases of hyperthyroidism and its effect on the clinical condition was observed In 17 cases the basal metabolism was watched concurrently, and in five cases observations were made on the sugar tolerance In all of them the condition was apparently true exophthalmic goitre, but it is possible that the three who reacted badly may have been atypical examples of toxic adenomata

All the patients were kept in bed during the first few weeks of treatment and were given the ordinary hospital diet equivalent to about 2200 calories Later treatment was continued while they attended as out-patients at intervals of a week or a fortnight.

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glucose This is most likely due to an effect on the storage mechanism of the liver. Confirmation of this is found in the effect of thyroid feeding in depleting the liver of glycogen[13] and by the fact that thyroid feeding in the normal individual may lead to the development of a similar type of sugar curve to that found in exophthalmic goitre

If this impaired sugar tolerance were the result of altered thyroid secretion it seemed possible that the effect on the basal metabolic rate might be accompanied by an improvement in sugar tolerance It is suspected that both thyroxin and adrenalin are able to inhibit the storage of glycogen by the liver and to cause the breakdown of previously formed glycogen into sugar Possibly iodine, by altering the secretion of the thyroid gland may indirectly prevent its inhibitory effect on the storage mechanism and thus make storage more efficient and increase the sugar tolerance.

In four cases of this series the sugar tolerance was estimated by MacLean s method before and after treatment with Lugol's solution. The basal metabolism was also estimated before each test In the fifth the sugar tolerance and basal metabolism were estimated after nine months' continuous iodine treatment The results in Table II show a marked improvement in one case a slight change in two, and no change in one The sugar tolerance in the fifth was still greatly impaired after nine months' iodine. although the basal metabolism was normal Iodine appears to have slight influence on the impaired sugar tolerance in hyperthyroidism -It is possible that it may cause a transient initial improvement which coincides with the lowering of the basal metabolic rate

Conclusions

Lugol's iodine given to cases of true exophthalmic goitre has the following effects —

The symptoms and signs are lessened. A point of maximum improvement is reached after from two to six weeks' continuous treatment Most cases then relapse slowly even though iodine is continued. Clinically a low grade hyperthyroidism persists

The *weight* is increased The *basal metabolic rate* is reduced to normal limits after from one to six weeks In most cases it then rises slowly again even if iodine is continued. Cessation of iodine is followed by an immediate rise The *sugar tolerance* appears to be slightly improved in some cases.

Five to ten minims of Lugol's iodine three times a day is a safe and efficient dose in most cases for the first few weeks' treatment and 5 minims may be continued safely and with benefit to some patients for six months An increase of symptoms, however during treatment is an indication for a smaller dose An abnormally firm thyroid gland. exceptionally severe nervous symptoms or loss of weight during the first few weeks of treatment are warnings that Lugol s iodine may be dangerous

In conclusion I should like to thank Dr A. E. Russell, Dr. E F. Buzzard Prof H MacLean Dr. M A. Cassidy and Dr R. C Jewesbury for permission to investigate cases in their wards at St Thomas's Hospital

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THE GROWTH OF TUMOUR IN TISSUES EXPOSED TO X RAYS AND RADIUM *

BY S RUSS, D Sc.

AND

G M SCOTT.

(*From the Cancer Research Laboratories, The Middlesex Hospital*)

PREVIOUS experiments have shown that rats which have been exposed to repeated small doses of X rays and afterwards inoculated with Jensen s rat sarcoma (J R S) do not grow the tumour quite so quickly as do normal rats[1] Murphy[2] found that after purely local irradiation of the skin of mice *intra*-cutaneous inoculation of tumour rarely grew, but in the case of *sub*-cutaneous inoculation there was very little difference between the growth in the treated mice and the controls As these observations have some bearing on the therapeutic uses of X rays and radium, more experiments on these lines have been carried out; and from the data in the following paper it seems pretty clearly indicated that sarcoma of the rat, implanted subcutaneously. does not grow at the normal rate in a region which has been given a suitable dose of radiation

FIG 1

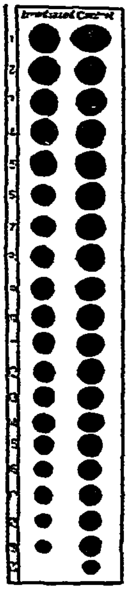

FIG 3

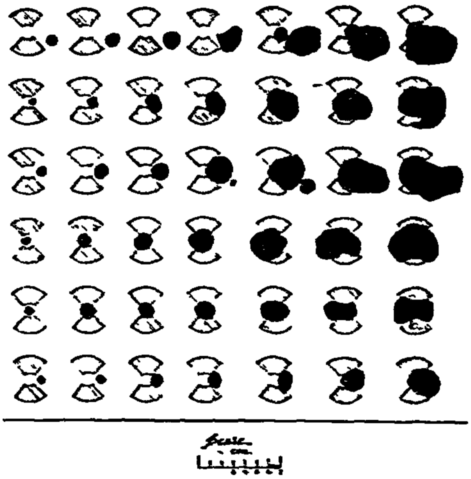

FIG 1 —Left column = irradiated animals Right column = normal animals

FIG 3 —Preferential growth of tumour into non-irradiated tissue.

Preliminary Experiments

Young rats were inoculated on the flank with small pieces of J R S.; three or four days later the graft was covered with a lead disc 1 mm. thick and 9 mm diameter, and the surrounding tissue exposed

Length of irradiation	Irradiation	Average volume		Ratio
		Experimental.	Controls.	
30 min. once	After inoc	21 0	35 2	0 6
30 ,, twice	,,	0 9	16 6	0 54
30 ,,	,,	2 6	13 2	0 20
45 ,, once	Before ,,	0 4	3 8	0 10
50 ,, ,,	After ,,	10 4	21 5	0 48

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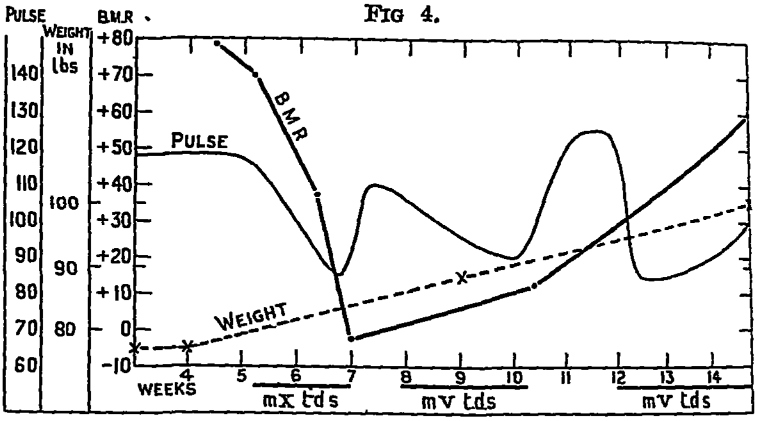
* A paper read at the Section of Electro-therapeutics, Royal Society of Medicine, on April 8th

[1] Russ Chambers, and Scott Proc Roy Soc, B vol xcvii, 1921 [2] Murphy J B Jour Exp Med., 1921 et seq

The initial lowering of the basal metabolic rate to normal was very constant and occurred in 13 out of the 14 cases in which it was estimated Two to three weeks' treatment was the average time required for this When iodine was continued after this point of maximum improvement the basal metabolic rate rose again in most In two cases only, after six and nine months' treatment respectively, was it still below normal Lugol's solution was also used successfully in one patient whose symptoms and signs, though relieved by partial thyroidectomy, were not cured Six months after operation the basal metabolic rate was still + 39 per cent Iodine treatment was then given for three months and at the end of this time the basal metabolic rate was + 3 per cent, and she appeared to be cured

Fig 4.

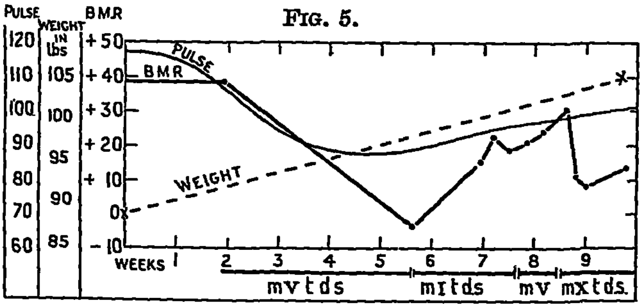


Case 12 —Severe exophthalmic goitre Female aged 26

Intolerance

No cases of iodism were noticed Increased nervous symptoms may have been due to iodine in three patients The first was a woman with moderately severe hyperthyroidism which had supervened on an adenoma of many years' standing Thirty minims of Lugol's solution in two days caused a marked increase in nervous symptoms These abated when treatment was stopped

Fig. 5.



Case 13 —Severe exophthalmic goitre Female aged 32

The second (Case 6) appeared to be a moderately severe example of true exophthalmic goitre Nervous symptoms were unusually predominant and the thyroid was exceptionally firm and nodular. Only slight exophthalmos was present After doing well for a fortnight (see Table I.) he became maniacal and had to be controlled with morphia and hyoscine

Case 19 was a severe example of true exophthalmic goitre with a large, firm thyroid and moderate exophthalmos Ten minims of Lugol's solution were given three times a day for three weeks and during this time the thyroid became extremely firm and the clinical signs and symptoms improved only slightly She then became excitable and developed illusions of persecution. Iodine was stopped and sedatives controlled the condition which slowly subsided

The presence of an abnormally firm or nodular thyroid and exceptionally severe nervous symptoms appear to be contra-indications to the giving of iodine Failure to gain weight while taking it is another indication for caution Failure to improve is an indication for reducing the dose

Effect of Iodine on Sugar Tolerance

The profound effect of iodine on the basal metabolic rate in exophthalmic goitre suggested that it might also influence the decreased sugar tolerance in that disease

Table II —*Showing Sugar Tolerance Before and After Treatment with Lugol's Iodine.*

—	B M R (per cent)	Resting	Blood sugar after glucose				Urine after test
			30 mins	60 mins	90 mins	120 mins	
Case 6							
Before treatment .	+37	0 08	0 26	0 32	0 35	0 32	Sugar present
After lugol ♏x. t d s, 9 days	+10 4	0 12	0 21	0 19	0 19	0 11	Trace of sugar
Case 7							
Before treatment	+54	0 06	0 11	0 16	0 27	0 25	,, ,,
After ♏x t d s, 10 days	+18 4	0 09	0 13	0 17	0 17	0 19	,, ,,
,, ,, 20 ,,	− 4 3	0 08	0 18	0 15	0 19	0 12	,, ,,
After lugol stopped, 12 days	+37	0 09	0 11	0 16	0 28	0 31	Sugar present
,, ,, resumed, 10 days	+ 7	0 09	0 15	0 23	0 27	0 22	,, ,,
Case 8							
Before treatment	+32	0 1	0 2	0 22	0 2	0 21	,, ,,
After ♏x t d s, 10 days	− 1	0 09	0 15	0 16	0 17	0 2	Trace of sugar
After partial thyroidectomy, 14 days	+18	0 1	0 14	0 13	0 14	0 14	No sugar present
After lugol ♏v t d s, 10 days	+12 5	0 11	0 17	0 2	0 18	0 14	No sugar
Case 5							
After lugol ♏v t d s, 9 months	−15	0 12	0 2	0 28	0 21	0 21	Sugar present
Case 19							
Before treatment	+37 2	0 12	0 23	0 23	0 12	0 11	Trace of sugar
After lugol, ♏x t d s, 11 days	+10 8	0 13	0 23	0 26	0 23	0 12	,, ,,

It has been shown by Sangar and Hun [12] that in conditions of hyperthyroidism sugar, when offered to the tissues, is burned with great avidity and the increased utilisation of carbohydrate after carbohydrate ingestion along with the maintained high blood-sugar curve point to an inability to store

OUTBREAK OF ENTERITIS NEAR GLASGOW.

A BACTERIOLOGICAL ACCOUNT

BY W R WISEMAN, M B, B Sc, F R F P S GLASG

(From the Public Health Laboratory, Corporation of Glasgow)

IN October, 1926, throughout an area bordering on the Clyde, a large number of persons (over 80) were seized with enteritis, the cases occurring over a period of some weeks The duration of illness of the patients who came under bacteriological notice was short—four to seven days—with the exception of one who suffered three relapses, and one, aged 70, who was ill for three weeks Adults as well as children were involved It was suggested that the milk-supply should be scrutinised, and accordingly the first six specimens of fæces submitted for bacteriological examination comprised three from patients in the village and three from persons on the farm supplying the area with milk Five of these six specimens yielded the organism which was the cause of the trouble The various organisms will be referred to here as the bacilli of Lang, Arneil, and Stewart (the villagers), and of A.B 2 and A.B 3 (the wife and daughter respectively of the farmer A.B) A B delivered the milk personally, but his stools failed to yield the organism on two examinations It is interesting and of some importance that A B 2 had never exhibited any symptoms, though the organism (in small number) was got on the first examination A B 3 had had diarrhœa at the beginning of October, and her organism was found on the first examination, 13 days after the onset Besides those five organisms three samples of blood sera fell to be examined—viz, from A B, Lang, and another patient Lyle

During the first few days of incubation the reactions of all the five organisms in the biochemical tests were identical with those of the dysentery bacillus of Flexner, but after the first week or so these reactions altered so as to become the same as those characterising the organisms of Sonne's Group III of dysentery bacilli [1] It is not proposed here to describe these changes Attention having been directed to these two groups during the investigation, it follows that the serological work may best be described under three heads (1) Relations with Flexner Y bacilli and sera (2) Results of the interaction between the isolated organisms and the patients' sera (3) Relations with Sonne III immune sera

It must be stated at this point that on the plate culture from Stewart one or two rough dry colonies appeared among the predominating smooth, moist ones These were the same organism Stewart "rough" was agglutinable throughout in a manner that contrasted strongly with Stewart "smooth" and with the other members of the series As it was agglutinable even by a Flexner V serum (1/100 in 24 hours, with no reaction in 1/25 in five hours) it is not necessary for the purposes of our conclusions to take the figures associated with it at their actual face value On the other hand, rough variants (if this be one) of the Sonne III type of organism may have it as an inherent property to be somewhat more sensitive to specific agglutination than the type colony, and indeed the writer has noted this phenomenon in relation to other species of organisms Time was not given to work out this point Rough variants have not hitherto been noted in connexion with the Sonne III group.

1 (*a*) Artificial agglutinating sera for *B dys* Flexner V, X, Z, and Y (titres 200) failed to agglutinate the bacillus of Lang and of A B 2 in dilution 1/25 in 24 hours at 52° C As already noted, *B* "Stewart" (rough) reacted in dilution 1/100 of a Flexner V serum in 24 hours (*b*) Lang's serum and Lyle's serum (both taken at a favourable period) were both negative to *B. dys* Flexner V in 22 hours, the former in dilution 1/25, the latter in 1/50 These tests were sufficient to rule out the Flexner Y group

2 The results of agglutination tests with patients' sera and three organisms of the series as well as with control cultures are best seen in a table Bacilli B 4, H 3, and S 269 are members of the Sonne III group

TABLE I —*End-points with Patients' Sera*

Organism	Lang	A B	Lyle
Lang	< 25	< 12	< 25
Stewart	< 25 smooth col	< 12, in 5 hours 200 trace, rough col	< 25, in 5 hours 200 +, rough col
A B 3	< 25	< 25	< 25
B 4	80 in 5 hours	Not done	80 in 5 hours
H 3	50 , trace in 5 hours	Not done	Not done
S 269	25, trace	< 25	25, trace

These tests were made at 52° C and were read by hand-lens, except in the case of B 4, which was visible to the naked eye, and where not otherwise stated they proceeded for 22 hours in the water-bath If we leave in the meantime, as suggested above, the reaction of Stewart's rough colony, it is seen that the patients' organisms were not agglutinable by the sera of the patients at the time the organisms were isolated Accordingly, the modified reactions given by the three stock organisms created a difficulty in view of the behaviour of the patients' bacilli, for no doubt at all was entertained at any stage that these latter organisms represented the cause of the outbreak On the very few occasions on which the writer had met with Sonne III bacilli the organisms were agglutinable by the sera of the patients, provided the case was neither chronic nor rapidly fatal It is to be noted that we are dealing with organisms the determination of whose occurrence has been very rare in the West of Scotland, and even in Great Britain and there fore there has been little opportunity to cultivate familiarity with differing properties of different members of the Sonne III group from their isolation onwards Let us now compare with Table I. the behaviour of Lang's bacillus and of the bacillus of A.B 3 with the original specimen of Lang's serum two months after the isolation of the organisms (Table II)

TABLE II.

Lang's serum	Dilutions			Serum control 1/25
	25	40	100	
V B Lang	+	Strong trace	Faint trace	—
V B A B 3	Strong trace	Trace	—	—

TABLE III

Serum A B	Dilutions		Serum control 1/25
	25	40	
V B Lang	—	—	—
V B A B 3	—	—	—

These reactions were read by hand-lens and were given in four hours They demonstrate (1) that the serum originally supplied and used for the tests of Table I contained agglutinins specific for the organisms of the outbreak, and (2) that organisms which originally gave no response in agglutination tests became agglutinable after a period of residence on an artificial nutrient medium to a square radium capsule for 30, 45, or 50 minutes The capsule used was 1 8 cm square, was screened by 0 2 mm of silver and contained 30 mg $RaBr_2$ $2H_2O$. At half-time it was turned through an angle of 45 degrees so that the irradiated area might be more or less circular In some cases control tumours were grown in the same rats, in others in different rats, but in either case the control tumours were always on the average the larger (See table) A single exposure of 30 minutes produced epilation and permanent loss of pigment in the hair

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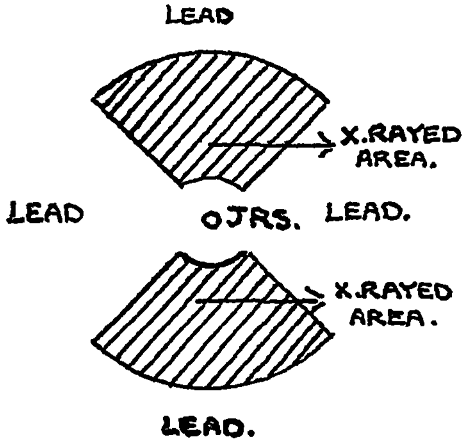
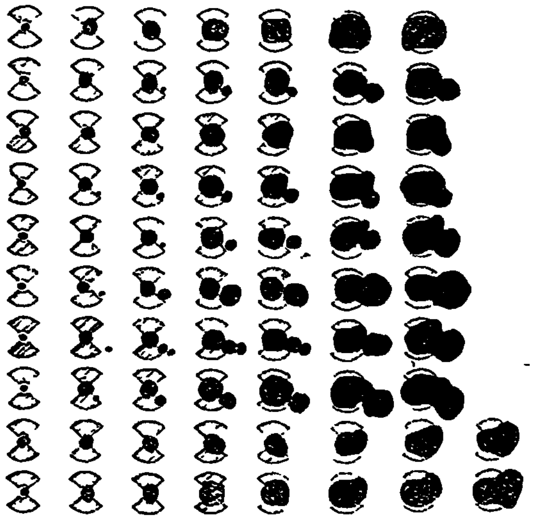
[1] Sonne, C Centralbl f Bacteriol., Orig, 1915, lxxv, 408

FIG 2



In one experiment the capsule was screened with 1 mm of aluminium, and the length of the exposure increased to 60 minutes The silhouettes in Fig 1 correspond to one-seventh of the actual sizes of the tumours 26 days after inoculation, the volume of the tumours in the irradiated areas was 0 52 that of the controls

FIG 4



Preferential growth of tumour into non irradiated tissue

All these observations on more than 100 rats suggested that irradiation of the skin distinctly hindered the growth of the tumour, but this point was tested in a more exacting fashion

Final Experiment

Each rat was covered with lead (2 mm thick, enough to stop the X rays used in these experiments), except for two areas the actual size of which is given here (Fig 2) The rats were then exposed to measured doses of X rays while under an anæsthetic In some cases they were inoculated with J R S before the X ray exposure, but in most cases this was done three or four days afterwards, as nearly as possible into the middle of the screened area directly between the two exposed sectors

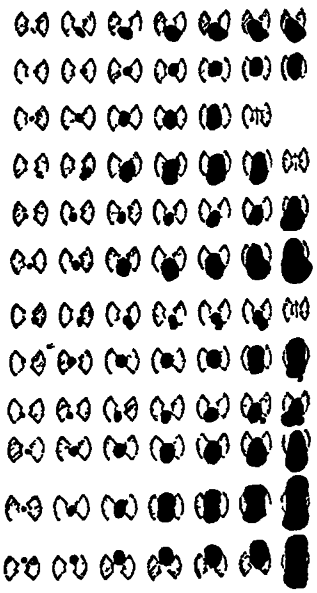
Measurements were taken and charts made on squared paper twice a week, the charts all showed the same tendency, the J R S grew much more readily in the normal than in the irradiated areas In many cases where the irradiated area was eventually invaded by the tumour the growth was much flatter than in the normal regions

The following series was carried out, Figs 3 and 4 only being reproduced here —

	Exposure to X rays	Subcutaneous inoculation
(Fig 3)	30 minutes	3 days later
(Fig 4)	20 ,,	,, before
	45 ,,	,, later
	30 ,,	,, before
	45 ,,	,, 1 month later

All the rats in these experiments were inoculated in the flank, normally J R S in this position grows more or less spherically with a tendency to track into the axilla and *towards the chest*, one X rayed sector was between the nodule and the axilla, and the others directly below it The tumour grew more readily towards the chest and avoided the X rayed area ear the axilla (vide Figs 3 and 4), so another batch of rats was inoculated and irradiated for 30 minutes, and the X rayed areas turned towards the chest and back The results of this experiment are charted in Fig 5, and show that there is exactly the same thing happening, the tumour growing much more readily in the normal tissues than in the X rayed, irrespective of the position

FIG 5



Preferential growth of tumour into non irradiated tissue

The X rays used in all these experiments were generated from a Coolidge tube, with an alternative spark gap of 5 cm between spheres 5 cm diameter Under the same conditions of output and distance it takes about 50 to 55 minutes to give a lethal dose to J R S, the effect of doses of 20 to 45 minutes on the skin ranges from partial epilation to slight blistering

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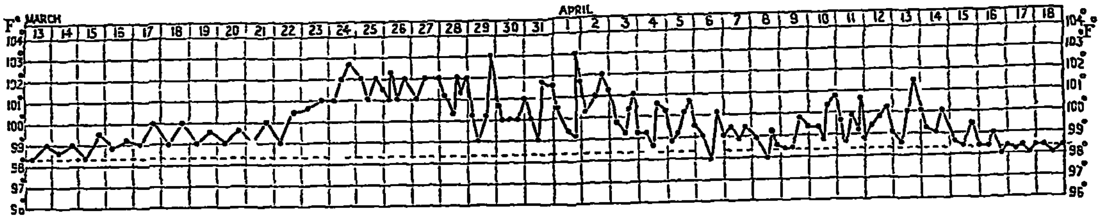
THE SUFFOLK HOSPITAL —Last year the East Suffolk and Ipswich Hospital Contributory Scheme produced over £14,000, an increase of 79 per cent over the preceding year Land has been purchased for the enlargement of the West Suffolk Hospital at Bury St Edmunds Owing to pressure the same ward has to be used for medical and surgical cases, there are insufficient beds for female patients, and the out-patient accommodation is declared in the annual report to be "grossly inadequate"

DIMINUTION IN VENEREAL DISEASE IN BIRMINGHAM The medical report for last year of the Birmingham and Midland Hospital for Skin and Urinary Diseases states that the number of patients with venereal diseases again shows a diminution This is largely due to a striking decrease in the prevalence and severity of such diseases The report adds that in the whole of the Midlands there appear to be fewer than 30 beds permanently allocated to skin diseases, a number which is "pathetically insufficient"

1–2000 Against *Bacillus typhosus* and *paratyphosus* A, B, and C, the reactions were completely negative. Cultures made from the urine were negative

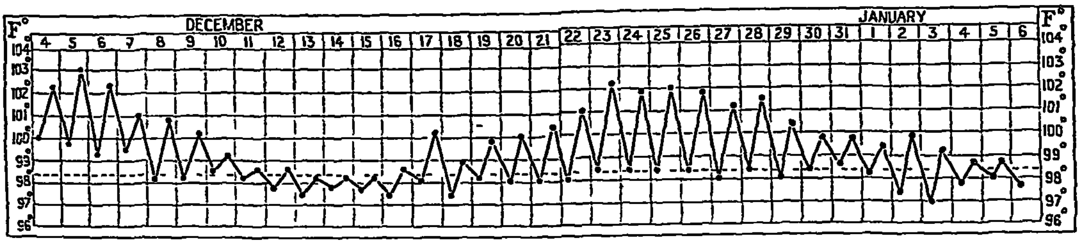
A record of the temperature from March 13th to May 3rd was obtained and the greater part of this is shown in Fig 1 The undulant character of the fever is not well shown. During the pyrexial period the pulse-rate varied between 96 and 120 Within a few days of admission to the nursing home the symptoms abated, on April 16th the temperature fell to normal and remained so until her discharge on May 3rd There was, however, a somewhat protracted convalescence and it was not until the end of June that the patient was able to resume her normal life

FIG 1 (CASE 1)



CASE 2 is that of a man aged 40, a market-gardener, who lived in a small village in Kent He had served in France during the war but otherwise had never been abroad There was no history of any previous illness suggesting undulant fever In March, 1926, he had an attack of influenza with physical signs at left base suggesting early pneumonia, but no consolidation supervened The undulant fever appeared to commence insidiously, for, during the summer of 1926, he began to feel unwell until, on Nov 10th, he suddenly collapsed He complained of fever, severe pain in the small of the back, and a throbbing headache After several days he recovered and was able to resume his work On Dec 4th, however, another attack of fever began and, as is shown in Fig 2, the temperature rose and fell until Dec. 12th. It remained normal for five days until Dec 17th, when another attack commenced This continued and on Dec 31st, when the attack had almost subsided, he was admitted to a nursing home under the care of Dr A. E Russell

FIG 2 (CASE 2).



On admission he complained of a general feeling of fatigue and weakness, pain in the small of the back, and sweating, which was not excessive No physical signs were discovered on examination, and there was no enlargement of the spleen. A blood examination done on Dec 31st gave the following result hæmoglobin, 84 per cent, total red cells, 5,550,000, total leucocytes, 3960, with polymorphonuclears 47 5 per cent, lymphocytes 39 per cent, large hyalines 12 per cent, and eosinophils 1 5 per cent A blood culture done on the same date proved sterile, but the agglutination reactions showed positive results against *M melitensis* to 1–1000 and against *B abortus* to 1–2000. Against *B typhosus* and *paratyphosus* A there was positive agglutination in a dilution of 1–25, but completely negative against *B paratyphosus* B and C, these results being attributable to previous inoculation with T A B vaccine. Cultures made from the urine were negative The symptoms gradually abated and the temperature fell to normal on Jan. 5th, 1927, and remained so until he left on Jan 21st, since when there is no history of any recurrent attack.

The clinical course of each of these cases, the results of the blood examination, and the serum agglutination reactions suggest strongly a diagnosis of undulant fever I regret that in neither case was a positive culture obtained either from blood or urine, but in each case my only opportunities occurred almost at the termination of the disease In the event of failure to isolate the causative organism, no real differentiation between an infection due to *M melitensis* and one due to *B abortus* is possible Such evidence as there is, however, would indicate that both were cases of *B abortus* infection The antiserum prepared in the laboratory against *M melitensis* antigen agglutinates *M melitensis* to a titre of 1–2500 and *B abortus* to 1–1500, whereas the sera from both patients agglutinated *B abortus* to a higher titre than *M melitensis* Both patients drank cow's milk obtained from farms in their immediate vicinity and in both cases there was a vague history of abortion amongst the cattle, but confirmation could not be obtained In neither case was there any history of goat's milk being taken, nor were there any goats in the surrounding neighbourhood

I wish to express my thanks to Dr Box and to Dr Russell for permission to report these cases

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A CASE OF
MENINGITIS ASSOCIATED WITH *B PROTEUS*

BY GEOFFREY BEWLEY, M D DUB,
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AND
ERIC S HORGAN, M D DUB,
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CASES of meningitis or other acute infections due to *Bacillus proteus* seem to be extremely rare A recent article by Neal [1] deals with meningitis due to organisms of the *coli* group, but no mention is made of *B proteus*, it being presumably considered outside this group The only cases we can find recorded of virulent *proteus* infections are one of *B proteus* septicæmia in man [2] and one of *proteus* meningitis in an infant [3] In addition Anderson [4] has recorded two cases of typhus fever, in which *B proteus* (apparently of the same strain) was isolated from the cerebrospinal fluids, but as meningitis was not present in either case the significance of this finding is doubtful.

The following case presents several points of interest in this connexion

Clinical History

The patient, a boy aged 13 years, had always been healthy until Nov 23rd, 1926, when he developed a headache which gradually became more severe Four days later he started vomiting and was unable to take any food, and on the

These facts having been established, it was important to return to the serum of A B (the farmer and distributor of the milk who, however, was *not* known to have been a sufferer), and to test the two months' old cultures with it as originally supplied (Table III)

The minus sign means no reaction Tests read by lens after four hours in water-bath and overnight on bench These results confirmed the negative findings with the stools of A B and, excluding accidental contamination of his hands and clothing by other members of the household, were sufficient to declare him free from infectivity These last tests, again, served to discount the reaction given by Stewart's rough colony in Table I , for serum A B would otherwise now have been agglutinating, say, *B* " Lang "

3 Relations with immune sera prepared from different strains of Sonne III bacilli three sera were used, called here S 269 H 5, and D (*a*) Agglutination results obtained early in the investigation are shown in Table IV

TABLE IV —*End-points with Immune Sera*

Organism	S 269 (titre 12,500)	*H* 5 (titre 5000)	*D* (titre 12,500)
Stewart (" rough ")	3000	< 500	Not done
Lang	< 500	< 500	< 500
Arneil	< 500	< 500	< 500

500 was the lowest dilution used, the readings being made by lens after four hours at 52° C

(*b*) 1 Agglutination results obtained after the organisms had been on artificial media for approximately nine weeks the bacilli of Stewart (" smooth "), Arneil, Lang, A B 2 and A B 3 were each agglutinated by Serum S 269 to full titre—namely, 12,500—the serum controls being negative in each case in 1/25, and the results read as in Table II All the flocculations were very fine, an appearance not uniformly given by all members of the Sonne III group

(2) *Saturation Experiment* —The aim of the experiment is to ascertain whether any of our organisms is able to withdraw from a Sonne III immune serum practically all its power to agglutinate the bacillus used to prepare the serum, and incidentally other bacilli of the same group For this purpose serum S 269 and bacillus A B 3 were used, and the results of the tests are shown as fractions The numerator *represents the end-point of agglutination* with the treated serum upon the organism named, the denominator that with the untreated serum Serum S 269 saturated with bacillus A B 3—

On S 269 $\frac{250}{12,500}$

On M 2 $\frac{250}{12,500}$

On S 268 $\frac{250}{12,500}$

On H 5 $\frac{125}{12,500}$

The lowest dilution used was 1/125 It is seen that absorption of agglutinins is for practical purposes complete The experimental results now presented are sufficient to demonstrate that the organisms causative of this outbreak are to be placed as members of Group III of Sonne's classification of dysentery bacilli

Comments

The occurrence in this country of the type of organism we have been dealing with has hitherto, so far as we know, been rare Of course, it is easy to conceive that if met with it might readily have been taken *to be an inagglutinable or atypical* Flexner bacillus A report of the Medical Research Council for 1920[2] states that the type had not yet been recognised in this country One of the main objects in making this communication is to emphasise the possibility of the occurrence of inagglutinable forms of this organism, when there may be some *hesitation* and delay in naming the species

But administrative action is by no means conditioned by such delay For this purpose the naming *of species is of secondary moment* During the period when no serological information of a convincing kind was forthcoming, a report was made to the administrative authority, the conclusion of which was as follows " The organisms of the present series do not so far appear to be distinguishable by cultural methods from the Sonne III group Briefly, the grounds on which it is held that the organisms of our series were causative of the outbreak are as follows (1) they are of a dysenteric type , (2) to the minutest details they are all identical, possessing certain cultural characters which, were it not that these are also possessed by the Sonne III group and by it only, might be described as almost if not quite unique, (3) although they are of quite uncommon occurrence, they were cultivated from the specimens submitted with *a striking, almost processional regularity* " Thus in the presence of, and in spite of a temporary difficulty that the bacteriologist may find in giving a name to certain strains of this group the grounds and modes of administrative procedure, so far as the laboratory can indicate them, are really as satisfactory and abundant as they would be if the organisms had furnished all the data usually considered necessary for scientific classification

Any epidemiological facts relative to the outbreak as it actually happened were furnished by Dr A Johnstone, Health Department, Dumbarton, as factors bearing on the bacteriological work, and I am indebted to him for any facts of this kind which may have necessarily appeared in the introduction to this communication

Clinical and Laboratory Notes.

TWO CASES OF UNDULANT FEVER OCCURRING IN ENGLAND

BY J BAMFORTH, M D LIVERP , M R C P LOND ,
ASSISTANT BACTERIOLOGIST ST THOMAS'S HOSPITAL.

IT has recently been pointed out by G S Wilson and Muriel M Nutt[1] that *Bacillus abortus* is frequently present *in cows' milk* in certain *English* counties. The possibility of human infection from this source is therefore of some importance Cases of *B abortus* infection in man have been described in various parts of the world by different authors and the following records may prove of interest

CASE 1 is that of a woman aged 63, who had never been abroad and was domiciled in London In July, 1925, she went to live in a small village in Essex and remained there until Christmas, only occasionally coming to London for business purposes She stated that her illness commenced about the end of November, 1925 She was unable to concentrate on her work and felt tired and ready for sleep There was loss of appetite and the feet became swollen and tender On her return to London in June, 1926, she became much worse and experienced severe headache, sore-throat, and frequent attacks of shivering and perspiration These symptoms continued and, in addition, there was considerable abdominal discomfort from flatulent distension The attacks of perspiration persisted and were accompanied by a rise of temperature in the evening

On March 31st she became a patient in a nursing home under the care of Dr C R Box Palpation of the abdomen showed a certain amount of tenderness in the epigastrium There was no enlargement of the spleen A blood examination done on April 1st gave the following results hæmoglobin, 62 per cent , total red cells, 5,310,000 , total leucocytes, 6250 per c mm , with polymorphonuclears 34 per cent , lymphocytes 62 per cent., and large hyalines 4 per cent. Blood culture and agglutination tests were done on the same day The blood culture proved to be sterile, but the serum *showed positive agglutination* against *Micrococcus melitensis* to a titre of 1–1000 and against *B abortus* to

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[2] Med Res Council, Spec Rep Ser , 1920, No 51, p 51

[1] Jour Path and Bact , 1926, No 2, xxix , 141–148

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

GENERAL MEETING OF FELLOWS

A SPECIAL general meeting of Fellows was held on April 7th, Sir STCLAIR THOMSON in the chair, when Mr W G SPENCER opened a discussion on

BLOODLETTING

The subject. he said still lay to some extent under the cloud of prejudice handed down from the days of general disuse of venesection Under certain circumstances it might be the sole means of saving life but further evidence was needed to establish the indications for more chronic conditions The discovery of the circulation had had no influence upon the practice of bloodletting which had been discarded 300 years later, owing to the revolution in the art of diagnosis Mr Spencer then reviewed the history of the procedure among the ancient and mediæval physicians Some of the influential members of the profession who had put forward opinions directed towards the disuse of bloodletting had been John Hunter, Marshall Hall, P. C A Louis, Hughes Bennett, James Paget and Benjamin Ward Richardson Impairment of the pulmonary circulation was the capital indication for bloodletting Experiments on asphyxia had shown that the blood became more viscous and that less and less venous blood reached the left auricle and the myocardium which was thereby reduced in activity At the point when respiration had ceased, although the heart was still beating venesection to an extent sufficient to cause a sudden fall of blood pressure in the pulmonary circulation produced afferent impulses, transmitted by the vagi to the respiratory centre and there was also a rapid withdrawal of fluid from the connective tissues back into the blood which thus became less viscous Mr Spencer referred to a number of cases recorded by Henry Sutton Pye-Smith and others more recently. in which venesection had saved life The conditions included passive congestion of the lungs. cardiac disease with failing circulation air embolism following artificial pneumothorax scarlatina, nephritis bronchitis and suffocative catarrh. ' apoplectiform seizures status epilepticus, and heat-stroke J S Haldane and his colleagues had pointed out that artificial respiration in cases of asphyxia might fail because apnœa had been set up In such instances venesection might start spontaneous breathing by afferent excitation of the respiratory centre Bloodletting had also been used effectively in acute alcoholic delirium and methæmoglobin. carbolic, and mushroom poisoning In young children it might be difficult to open a vein and some workers had adopted radial arteriotomy

Small quantities of blood could be conveniently extracted by cannulæ lubricated with an anticoagulant Venesection served as an adjuvant to drugs in promoting sweating expectoration, purgation urination, and sleep The pain of aneurysm and the headache of high blood pressure were relieved Polycythæmia of the type resulting from overproduction of red blood corpuscles was the one kind in which venesection was indicated Animal experiments had proved that after the first bloodletting there was increased activity of the bone-marrow and letting a few ounces of blood had been advocated by many practitioners for chlorosis The speaker had once seen a case so treated by Dyes

Dr HERBERT FRENCH dealt with the value of bloodletting in two types of chronic case Rare. but not so uncommon as was thought was splenomegalic polycythæmia, which he had seen treated in many ways but never so much benefited as by bleeding at regular intervals Nor did cases ever do badly under this treatment

More common, but difficult to define were cases among busy overworked intellectual men, who took too little exercise and who gradually found, somewhere between 45 and 55 that their brains would not work so well they felt giddy in the mornings, a little "swimmy" and so on This type of case was apt to get included with the high blood pressure group but hyperpiesia was not an essential feature of the clinical picture and bleeding gave relief regardless of whether it reduced the blood pressure or not The benefit was measured by the patient's own feelings, he felt better while it was being done. was much more active afterwards and returned spontaneously for another venesection In women the same kind of trouble with vague feelings of fullness in the head usually occurred about the menopause. Such patients invariably benefited by bloodletting. and the reason seemed to Dr French probably to be that there were times when the destruction of red blood cells did not continue as speedily as it should so that there was a banking-up in the system. If a pint of blood was removed a fresh pint was soon supplied and so the circulation was renewed Dr French then illustrated the simple and satisfactory "needle and bottle" method of removing blood The special needle differed from ordinary needles in being part of a cone and not of a cylinder. so that it caused very little pain and never allowed clotting

Dr FORTESCUE FOX said that the value of venesection had been brought home to him by a case of thoracic aneurysm Before means had been devised for estimating the blood pressure venesection had been used for all obvious emergencies of the circulation; cyanosis was relieved and the arteries became reflexly relaxed in pulmonary and cardiac cases thoracic tumours, carbon monoxide and other poisoning. Many remarkable cases of patients bleeding themselves in circulatory emergencies had been put on record. Cases of heatstroke demanded large venesections

Health seekers at spas said Dr Fox were not so much ill as candidates for illness and amongst such cases venesection had another field of equal or even greater usefulness Sometimes the sudden ingestion of water was in excess of elimination and. since the functions of elimination were commonly defective. the danger of plethora was by no means negligible A preparatory venesection or course of purgatives was often wise before taking the waters There were two types of hyperpietic the jovial florid, and plethoric individual and the more serious pale. anxious-looking one In both spontaneous hæmorrhage might occur from nose or uterus or profuse watery evacuations and symptoms were thus relieved Hyperpiesis and nervous hypertension were in most cases the transient disorders of an epoch, and many patients passed in time out of the danger zone The behaviour of the vessels shewed that the essential factor was hypertension—a disordered nervous and circulatory function Venesection might or might not cause a fall in blood pressure In many women a course of sedative baths after the menopause was preferable to venesection

Death from apoplexy in the fifties and sixties appeared to be increasingly common among brain workers and could often be prevented by venesection when the blood pressure began to rise Dr Fox suggested that many failures occurred because preventive measures were not bold enough and were taken too late His practice was to combine substantial periodical venesection with fasting in bed and a course of sulphates a regime which could be repeated if necessary every two or three months He had used the method in cases of more or less advanced cardiovascular degeneration as he could not believe that the high pressure was a desirable compensation for increased peripheral resistance the pressure was attributable to exaggerated tonus rather than to degenerative changes The vessels after long contraction would often in fact, resume their natural size under suitable treatment In many cases of atheroma of the aorta the blood pressure was liable to periodical and dangerous increase morning of Nov 29th he became unconscious and was brought to hospital

When first seen by one of us (G B) he was unconscious and could not be roused He was thin, pale, and had a coated tongue, his bowels not having moved since the onset of the attack, and his temperature was 101° F His head was retracted and his neck muscles stiff His pupils were dilated and did not react to light His knee-jerks were increased, but there was no ankle-clonus, and the plantar reflex was normal Kernig's sign was present and there was retention of urine A lumbar puncture was performed and 20 c cm of cerebro-spinal fluid drawn off under considerable pressure The fluid was slightly greenish in colour, very turbid, and contained an enormous number of polymorphs A portion of the fluid was sent for bacterial examination to one of us (E S H), who reported that a direct smear showed a very few Gram-positive diplococci Accordingly antipneumococcal serum was at once injected into the cisterna magna

Next morning the clinical condition was unchanged, except for the temperature having dropped to 99° F The bacterial report was received that a Gram-negative bacillus had grown from the fluid and was probably a contamination A second cisternal puncture was performed, the fluid was drawn off for another examination and more serum was injected On the following morning the patient's condition was worse, his temperature being 101° F and his pulse weak A third intrathecal injection of serum was given , but the temperature continued to rise, and in the afternoon it reached 108° F just before death supervened

No post-mortem examination of the body could be made

Laboratory Findings

When the first specimen of lumbar fluid was received direct smears (Gram stain) were made in addition to culture on blood-agar and glucose broth A careful search of the smears in addition to the numerous pus cells revealed what appeared to be Gram-positive diplococci—very few in number—and a provisional diagnosis of pneumococcus was made However, both liquid and solid media gave pure cultures of a Gram-negative bacillus There were only a few colonies on the blood-agar plates, although the purulent fluid had been spread thickly, and this perhaps accounts for the failure to find the bacillus in direct smears This was thought at first to be merely a contamination, but the second specimen of the fluid gave exactly the same organisms Examination for the tubercle bacillus was negative in both cases

The characteristics of the above organisms were as follows A Gram-negative motile bacillus morphologically resembling *B coli* The colonies on agar were large, white, and confluent, and grew in a series of concentric waves In broth there was a general turbidity with a putrid odour There was no hæmolysis on blood-agar

Fermentation Reactions—Acid and gas on glucose and lævulose , no change with maltose, mannite, dulcite, lactose, and saccharose Indol was produced in faint traces (Ehrlich's reagent) on a special peptone (difco) broth after several days' growth, but was not found when ordinary tryptic digest broth was used Gelatin was liquefied

The classification of the *proteus* group based on either fermentation reactions or indol production is extremely unsatisfactory at present, but the above organism corresponds fairly closely to *Proteus mirabilis* in Bergey's classification, or into group I according to Besson

In our opinion the Gram-positive bodies seen in the smears were certainly artefacts, such as are often seen in films containing pus It seems impossible to believe that they could have been living pneumococci, as we have never failed to grow such (from cerebro-spinal fluids) by inoculating it liberally into glucose broth It may be argued that these were dead pneumococci, but in this case some signs of clinical improvement would have been expected, and it is hard to see how they could have disappeared completely from the cerebro-spinal fluid in the 24 hours between the two punctures

On the other hand, it is difficult to state with certainty that the *proteus* organism was the cause of the fatal meningitis, but the fact must be significant that it was isolated in pure culture on two successive occasions

References—1 Neal Amer Jour Med Sci , 1926, 172–740 2 Irimonoiu and Popa Compt rend Soc de Biol , 1925, 92–1082 3 Bischoff and Brekenfeld Ztschr f Kinderh , 1925 39–421 4 Anderson Jour Path and Bact , 1921, 24–478 5 Bergey Manual of Determinative Bacteriology, 1923 6 Besson Technique Microbiologique et Sérothérapique, 1924

A CASE OF IODISM

BY MATTHEW MASSER, M B , CH B LEEDS.

THE following case has several interesting features.

An ex-soldier, aged 31, who was receiving a pension for war nephritis, came to me complaining of persistent headache, general malaise and debility, gastro intestinal discomfort, and poor appetite Examination showed him to have albuminuria and high blood pressure, to which his symptoms were attributed

He was put on a low protein and nuclein diet, and was given gr 5 potassium iodide three times daily Four days later I was called to his house The patient was in bed and complaining of severe running from the nose, inflammation in the right eye, and a swelling on either side of the neck Examination showed conjunctivitis of the right eye and coryza, an acutely injected and œdematous throat, and a painless bilateral cervical adenitis The tongue was thickly furred The chest was normal and temperature was normal There was no rash visible, nor was there any history of chill

The symptoms were apparently due to iodism, as they rapidly subsided on the cessation of the iodides The interesting features of the case are the painless cervical glandular enlargement, which was the most prominent of the patient's symptoms, and the possibility of the toxic symptoms being due to defective elimination of iodides by the damaged kidneys

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A CASE OF
POST-MORTEM CÆSAREAN SECTION,
WITH DELIVERY OF A LIVE CHILD

BY I R ROSIN, M B , B CH DUB.,

HOUSE SURGEON, THE INFIRMARY, BURY

THE following is a brief account of a somewhat unusual case

Mrs L K , aged 30 years, was admitted as an emergency case to Bury Infirmary on June 28th, 1926, in a state of unconsciousness

That morning at 6 o'clock her husband had gone off to work as usual, leaving her asleep in bed At about 9 15 A M it appears that "she got out of bed and fell heavily to the floor in a queer condition," according to the little daughter who immediately called in a neighbour The latter, knowing her to be pregnant and "expecting shortly," called in the midwife, who immediately sent for a doctor The medical man ordered her removal to hospital, where she was put to bed , but within a few minutes of her admission, while she was being examined, the faint trace of life still present flickered out

Although realising that the patient was dead, I persevered for 15 minutes in an attempt to resuscitate her by artificial respiration and administration of oxygen, and hypodermic injections of strychnine, digitalin, and pituitrin All these were of no avail

Palpation of the abdomen during this time revealed tumultuous movements on the part of the fœtus and the fœtal heart could be heard beating at the rate of 156 beats per minute Under the circumstances, I decided to perform Cæsarean section and delivered a full-time male child—in a state of asphyxia livida—a quarter of an hour after the mother's death Twenty minutes of artificial respiration and alternate immersions in hot and cold baths revived the child and he cried lustily He weighed 7¾ lb , and has since made normal progress

At the post-mortem examination of the mother, the liver was found to be enlarged and studded with small hæmorrhages , the spleen and kidneys were acutely inflamed, and the heart muscle was soft and showed signs of fatty degeneration The brain, on removal, appeared perfectly normal, but it was found that the entire left lateral ventricle was filled with a large recent blood clot

I am much indebted to Dr J C Turnbull, honorary obstetric surgeon to the Bury Infirmary, under whose care the case was admitted, for permission to publish these details

Sometimes only a short stay in hospital could be arranged, and perhaps when the patient left she was no better than when admitted. Crises occurred from time to time, and as a result the general plane of health was lowered Here operation was most helpful It was necessary to take the long view and patients must realise that this condition began gradually, went on for a long time, and therefore improved only slowly All cases should be carefully watched; he had found cardiac failure, glycosuria and mental trouble develop even while subjects were occupying hospital beds Sometimes visceral or cerebral intoxication dominated the picture Of 910 patients with exophthalmic goitre on whom he had operated, 61 had had established auricular fibrillation for months, some of them for years Many had continual œdema well up the body, and fluid in the abdominal cavity, their mental state being such that they could not be kept in their own homes

Safety and Efficiency of Operation

The origin of Graves's disease, said Mr Dunhill, was not necessarily in the thyroid gland, but it was the secretion from that gland, acting as a circulating poison, which damaged the viscera When medical treatment did not seem to have succeeded, the intoxication should be lessened by operation, which could be made safe by ensuring that the patient had no load to carry besides the disease Even at the present day patients who had gross sepsis were sent for surgical treatment Such conditions as abscess at the root of a tooth or septic tonsils did more damage to patients with Graves's disease than to ordinary people Everything which reduced the reserve of health should be eliminated before surgical intervention was considered, and operation should be prefaced by sufficient rest in bed and preparation of the patient If operation were attempted on the day following admission many patients would die Several days were needed for the pulse to come down to its resting level under quiet and absence of worry After this resting level had been reached iodine medication should be carried out; it would bring that level lower still and induce a change in the pathological condition of the gland which made the operation safer still At the operation itself the amount of interference must be governed by the patient's strength There was a temptation to get the operation over at one sitting, but it must be remembered that these patients were not subjected to operation until they had been ill a long time When cardiac lesions and œdema were present safety could only be ensured by the closest cooperation between physician and surgeon

As an anæsthetic in these cases Mr Dunhill regarded chloroform as absolutely unsafe Open ether was safe but it was inconvenient to have a mask over the chin Local anæsthesia gave a comfort in work and a freedom from bleeding which were otherwise unattainable Indeed, when auricular fibrillation was present he considered local anæsthesia essential Unless moribund, most patients stood the operation if these precautions were taken The removal of the first lobe was a comparatively easy matter, the difficulty lay in the taking away of the right amount of the second lobe In this second stage the approach had to be made through scar tissue the anatomical planes having been a good deal destroyed by adhesions Moreover a very vascular gland had to be cut through Unless the surgeon was prepared to carry through this second operation he should not attempt the first Enough of the gland must be removed to eliminate the toxic effects of the secretion always remembering the physiological needs of the body The death-rate following operation would vary within wide limits according to the type of patient, the time selected for operation and the care with which the preliminary treatment had been carried out Some surgeons would not operate on patients who were very ill because of the risk of spoiling their statistics If all cases requiring surgery were operated on the mortality-rate he thought, could not be brought below 3 per cent

In a large series of cases mental disorder was not infrequent Some patients suddenly became maniacal and died In the presence of mental symptoms he had never operated until the relatives fully appreciated what was at stake and it was well to have the help of an alienist before deciding to employ surgery People who had had Graves's disease in marked degree never, he thought became quite normal again, though the removal of a large part of the gland often brought about dramatic relief These patients if possible should not resume the hard work to which they had previously been accustomed.

The Medical Aspect.

Dr C M WILSON endorsed what had been said about the selection of cases for operation Cases of toxic adenoma should be operated on because the surgical risk was much less than in ordinary exophthalmic goitre and medical treatment was unsatisfactory Auricular fibrillation was also an indication for operation, as presumably the physician had been unable to restore the normal rhythm by digitalis In the remaining group however—namely, those in which, after six months of medical treatment, the pulse-rate remained over 100 and medical treatment was considered to have failed—a much closer examination of surgical claims was called for In many of these cases he thought, medical treatment had not been properly tried Mere rest and bromides could not be called medical treatment If it had been properly tried and had failed and something more was necessary, was that "something more" surgery, or was it X rays? In the best hands, the mortality of surgery in exophthalmic goitre varied between 2 9 and 5 per cent, the mortality after X rays was nil This comparison justified a very careful consideration of the claims of X rays, and in suitable cases their effects should be given a trial

To place a patient with exophthalmic goitre in a hospital ward was not necessarily to give her proper rest continued Dr Wilson There might be someone slowly dying in the next bed, or disquieting details might be taught to students over a patient near by It was doubtful whether hospital conditions were suitable for the medical treatment of these cases; what they needed was a quiet place in the country. Sepsis certainly played a part in the disease, but though it should be removed if found it should not, he thought, be imagined Minor operations had a bad effect on these patients An ordinary diet was not of any disadvantage For auricular fibrillation the digitalis should be pushed No one could tell for certain which cases would respond well to X rays, but very severe and acute attacks were unfavourable for their use So were cases in which the goitre was large, but the milder cases responded much better. X rays should be tried over a period of six weeks, at the end of which time any response would be evident It was well to have the basal metabolic rate of the patient estimated, so that the ray treatment should not produce myxœdema

Iodine, said Dr Wilson, was the fashion of the moment It was useful in preparation of the patient for ten days prior to operation, and also in combating crises, but it had not yet been proved of value in the routine treatment of the disease Unless its administration was accompanied by daily observation it was capable of doing much harm The mental factor was very important Surgery should be reluctantly employed as it often meant removing from a young woman three-fourths of a gland which was valuable physiologically leaving her with one-fourth in a condition of hyperactivity This residue might suffice for her needs while it remained over-active, but would it be enough to carry her through later, especially if she became pregnant? The success of surgery depended on the skill of the surgeon the preparation of the patient and the choice of the best time for the operation

The Time and Nature of Operation

Mr. C A JOLL discussed the suggestion that operation should always be deferred until six months

No little discrimination was needed in selecting cases for venesection He agreed with Dr French on its value in patients with flushing, heat and throbbing in the head without serious rise of blood pressure

Sir William Hale-White spoke of the enormous numbers of people bled every spring in past years, and said that the most striking thing he knew in the history of medicine was this abrupt change In 1840 a practitioner had been accused of malpraxis because he had not bled a case of pneumonia Cases of all sorts had been bled for no particular reason that we could see now except that it was the fashion Apart from tragedies due to loss of blood, many patients died of pyæmia from septic venesection wounds Nowadays the case above all others that called for bloodletting was the one in which the right heart was overwhelmed, and the guide was "Is the patient livid ?" The dilated right heart was in the condition of a paralytic bladder, and until it was emptied directly it could not contract and the patient would do badly Digitalis was often found to act much better after venesection than it had before Most pneumonias were not livid, and so did not need it In apoplexy it was important to choose the case which was one of embarrassment of respiration —again shown by the livid face Venesection was of immense benefit in those few cases of status epilepticus where convulsions predominated so that the patient was livid It was not of much permanent use in uræmia unless the patient was very livid, little poison would be removed from the system by withdrawing a pint of blood It relieved the pain of aneurysm and was undoubtedly valuable in polycythæmia where the total volume of the blood, as well as the number of corpuscles, was increased, where the condition was in fact an "innocent tumour of the blood" In cases of high blood pressure there was much to be said on both sides Two practical points might be noted the patient should always be bled sitting up, so that if he fainted he could be revived by lying down, and great caution should be exercised in bleeding the young and the very old, who stood it badly Arteriotomy had gone out of fashion, and leeches and wet cupping were ineffective

Dr J F Halls Dally mentioned further points in the history of the practice, and agreed with Dr French and Dr Fox that it was useful in high blood pressure, though depending less on the height of the pressure than on the symptoms The relief given by venesection was, however only temporary, and for real benefit should be combined with treatment by starvation for periods from 24 hours upwards and with general lowering and depleting measures

Sir James Dundas-Grant quoted successful cases in his own practice of the use of venesection in uræmia following scarlatinal nephritis, in asphyxia from drowning, in puerperal eclampsia and uræmia, and in post-operative congestion when hæmorrhage into the wound was threatened

Fleet-Surgeon W E Home described venesection in hospital practice in Edinburgh in 1841 Of the three leading physicians of that time Allison treated his "fever" cases with wine and opium, Henderson gave them nothing at all, and Craigie bled them There was no difference whatever in the mortality, but Allison's patients had a quick convalescence Henderson's had a long one, and Craigie's had a "protracted, painful, and terrible" one

Sir William Willcox thought there were five classes of case which benefited by venesection The first was that of right heart dilatation He thought that insufficient importance was attached nowadays to percussion; dullness in the fourth right space was a valuable indication of the size of the right auricle The second class was convulsive, including status epilepticus and uræmia Cases of chronic nephritis did not do well, but where the kidney was only temporarily incapacitated from function as in eclampsia and trench nephritis bleeding stopped the convulsions In the third class came heat-strokes, that the benefit was not due merely to removal of toxins was shown by the fact that if normal saline were introduced after the bleeding the convulsions were started all over again Polycythæmia was the fourth type of case, and the fifth he described as medico-legal—patients with violent asphyxia—e g, due to drowning or hanging He thought that Dr Fox's scheme of timely venesection in cases of high blood pressure was admirable Bloodletting was a form of treatment of the utmost value in certain cases and ought to be practised more than it was to-day

Dr H Letheby Tidy said that all were agreed that blood should not be let for anæmia or conditions of low blood pressure Much of the discredit which had fallen upon the practice was probably due to the error of applying it for those low pressure conditions which simulated high pressure—e g, cerebral thrombosis All were agreed also on its value in polycythæmia, in high blood pressure as described by Dr French and Dr Fox in sunstroke and in acute dilatation of the right heart with lividity There appeared to be two uræmic groups that mentioned by Sir William Willcox where venesection should be done and those more chronic cases described by Sir William Hale-White where it should not be used

Mr Spencer in reply, mentioned the large number of cases of carbon monoxide poisoning occurring at the present time in which only artificial respiration was tried

HARVEIAN SOCIETY.

A meeting of this Society was held on April 7th, Dr E Le Fevre Payne, the President, occupying the chair

Mr T P Dunhill opened a discussion on the

Treatment of Graves's Disease

He had come to regard the treatment of this disease, he said, as requiring the conjunction of the physician and the surgeon Often there came a stage at which medical resources seemed to have reached their limit, and then much could sometimes be done by surgery There had been a time when physicians and surgeons warmly debated on the best treatment—when physicians said that if a case were left alone and given a chance it would get better In this country the position had been reached at which physician and surgeon cooperated going through the wards together realising that these people were very ill, that they had a long and hard fight in front of them, and that sometimes they could be helped in one way and sometimes in another In every case of this disease medical treatment should precede surgical measures, for a long time every case should be regarded as medical The ætiology and pathology should always come into the surgeon's purview It could not reasonably be expected that surgery would always make the patient quite well, and any estimate of the results must be based on her condition before operation Sometimes circumstances prevented the ideal treatment being followed and even under good conditions in hospital wards some patients seemed to lose ground The time of operation must be carefully considered in each individual case It varied greatly according to the progress of the disease and the social position of the patient, but surgical intervention was practically never indicated during the first six months of the disease The onset might be insidious, indeed there must be many people who almost developed the disease but did not quite do so Therefore if exophthalmic goitre were met with in early stages it must be possible to restore the patient to normality Some cases however, began with severe symptoms such as vomiting and diarrhœa

Of 170 consecutive patients on whom he had operated between 1921 and 1925 68 had been suffering from the disease for more than four years 48 for over six years whilst 32 had been very ill over ten years This of course represented a very large total of morbidity and unhappiness as well as economic loss Circumstances often determined anxiety for operation, the patient might be poor and have the cares of a family upon her or she might have to earn her own living constantly. Her blood count was very fair, her blood pressure normal but her urine, though normal in quantity, contained some albumin and casts. She showed little response to treatment by rest in bed, starvation, lavage of the bowel, and purgation. Corpus luteum was given in 1 c.cm. doses hypodermically, with little or no result. The patient admitted that both she and her husband were anxious not to have a child at the time.

Following the practice of Malinin of the Frauenklinik in Saratow, about 25 c.cm. of the patient's own blood was withdrawn from the median basilic vein and was reinjected in six different places. This treatment was twice repeated at intervals of three days. The patient began to improve rapidly. The local parish priest visited the patient at this time and it must remain undecided whether the Church or Medicine was responsible for the successful issue.

CASE 2.—Mrs. B., aged 28, had been married four years, and was seven weeks pregnant. She had had one full-term pregnancy two years before. On admission her general condition was very bad. She showed great fatigue and anæmia, her blood pressure was 116-80, and her pulse-rate 90, the urine was scanty and contained albumin, casts, and acetone, the skin was dry, the tongue was dry and furred with sordes around lips and she suffered from great thirst.

The uterus, which was retroverted, was replaced and a pessary inserted. For the rest the treatment consisted of complete rest, purgation, lavage of the bowel, and rectal administration of sod. bicarb. and pot. brom. Corpus luteum extract proved ineffectual. After about two weeks the patient began to improve and eventually she was discharged cured.

CASE 3.—A primipara, aged 24, was 8 weeks pregnant. The uterus was in the normal position, the pulse-rate was 84, there was slight anæmia, and the urine was scanty, containing albumin, casts, and large quantities of acetone. The patient vomited on making the slightest movement in bed. The usual treatment of purgation, lavage of the bowel, and administration of sod. bicarb. per rectum was given. Corpus luteum had no effect given hypodermically. Irradiation of the hypophysis was attempted.

The first signs of improvement were noticed about 14 days after admission to the nursing home and followed rectal administration of pot. brom. gr. 30 in four ounces of water morning and evening.

Discussion.

The PRESIDENT referred to a previous discussion on hyperemesis in early pregnancy,[1] and to the great stress then laid by Dr. FitzGibbon on the neurotic element and its treatment by psychotherapy. He personally thought that a great many of these cases were toxic in origin. He had administered thyroid extract in a couple of cases but had not found it of any value. Dr. Cassidy was to be congratulated on not having had to induce therapeutic abortion in any of his cases. It was always taught that if starvation, thorough elimination, and rectal enemata did not stop the vomiting in these cases, then pregnancy should be stopped; yet Dr. Cassidy's three cases had all been treated in different ways, and it had not been necessary to stop pregnancy in any of them.

Dr. BETHEL SOLOMONS said that if women were unaware that vomiting occurred in pregnancy, few would suffer from it. Patients were often in doubt as to their condition because they did not vomit although told by their friends that they ought to do so. He was a firm believer in the neurotic or psychological element as an ætiological factor, both in the mild and severe forms of vomiting. Irrigation of the stomach had a good effect in all cases. When done gently it caused no shock, and it had the excellent effect of (1) removing the backflow from the liver, and (2) clearing up hysterical cases because it was unpleasant. It was also useful because purgatives could be left in the stomach, and he was surprised that Dr. Cassidy had not adopted so simple and excellent a form of treatment in any of his cases. He believed, too, in removing such things as basins from the patient's bedside and in putting the patient on a full diet free from all greases. While holding the view that most cases were of the psychological type he had full knowledge that there were some few which were toxæmic and must be treated as such. In the treatment by subcutaneous injection of the patient's own blood it was interesting to note that the sequence of events had been: injection of blood—marked *fright*—cure. It was seldom necessary, he thought, to perform therapeutic abortion.

Dr. GIBBON FITZGIBBON thought that the psychical element in these cases was very strong. Patients got into the habit of vomiting, and thought that they should vomit. While master of the Rotunda Hospital he had found that cases generally responded to starvation elimination and enemata, and he had only had to induce abortion twice. One of these had died even after abortion. These cases seemed to him to respond to all sorts of treatment, and the more he saw of them the more he was convinced of the psychical element in them. He thought there was no reason to believe in the toxic element in hyperemesis. Vomiting was always more severe in the multipara than the primipara. In one case he had tried injecting human blood into the patient, but without any result. There was far too much fear of letting these patients carry on and he thought that pregnancy should be allowed to continue up to the fourteenth or sixteenth week, different methods of treatment being tried till then before abortion was induced.

Dr. D. CANNON asked if any effort had been made by gynæcologists to visualise the mechanism of the stomach in hyperemesis. He had seen two cases in which it had been proved that achlorhydria was present. He referred to work done by Prof. D. P. D. Wilkie in this connexion and also to that of a German investigator who had shown that over-regurgitation of bile into the stomach would cause morning vomiting and other symptoms in pregnancy, and had suggested the administration of atropine sulphate. Dr. Cannon felt that these cases were functional and not toxic. He wondered how a retroverted uterus could cause gastric symptoms and yet he had often found that simple correction of the uterus did effect a cure. An American observer had proved that duodenal stasis was present in hyperemesis.

Dr. G. TIERNEY said that it was difficult to decide which cases were toxic in origin and which were not. He considered that a number of them had a psychic as well as a toxic element. He mentioned a paper recently published by Dr. W. E. Levy, of New Orleans, in which it was stated as evidence of toxæmia that acetone was found in the urine, with diminution in the blood-sugar and in the CO_2 combining power of the blood. The paper reported six cases in or about the fourth month of pregnancy. They had been treated for a time on general lines without success before coming under his care. Then they had been treated with insulin and glucose. One woman, who was four months pregnant, and had been vomiting continuously for three weeks, was in such a state that he thought he would have to resort to therapeutic abortion, but after intravenous injection of insulin and of a 10 per cent. solution of glucose, the vomiting had ceased, so that the patient went on to full term.

Dr. E. HARVEY suggested that the cases which were helped by insulin were those in which acidosis had been the cause of the vomiting. Insulin would not necessarily be effective in other cases in which acidosis was not the cause of the vomiting.

Dr. CASSIDY, in reply, said that he did not think the psychical effect of washing out the stomach would be sufficient to justify the distress which it would cause to these patients. Most of them were of a neurotic type. Generally, vomiting developed about the eighth week and stopped about the sixteenth week: it seemed that the vomiting diminished as the resisting powers of the body increased. Acetone would be found in the urine in any case of starvation and should not be taken as pathognomonic of hyperemesis gravidarum. An increase of bilirubin in the serum was, he thought, a sign that the case might be toxic. From the clinical point of view it seemed that the important thing was to try to distinguish between the toxæmic and the purely neurotic case.

Dr. D. CANNON read notes on a case of retroperitoneal fibroid and a discussion followed.

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[1] THE LANCET, 1926, i., 76.

had elapsed from the onset of the disease Apart from other considerations, this six months' delay might be very awkward for people who had to earn their living. Usually it was easy to find out in far less than six months whether a patient was likely to get reasonably well He would place the minimal period before decision at three months, and even then it would be nearly 12 months before the patient returned to work It was not right, he thought, to subject patients to a prolonged invalidism Basal metabolism was often loosely estimated, and it was easy for grossly erroneous figures to be reported The patient must be at rest in bed, and must be absolutely quiescent, mentally and physically

With regard to X rays, Mr Joll had looked up 50 consecutive cases which he had seen in private practice, 32 of them had had preliminary X ray treatment, and had only come to the surgeon because the X rays had not sufficed This was generally true throughout the whole range of his cases, X rays caused temporary improvement, but could not be considered curative He doubted whether myxœdema ever followed X ray treatment He agreed that iodine could reduce the pulse-rate and temporarily improve the condition of these patients but sometimes it caused deterioration It was wrong to broadcast the virtues of iodine in the treatment of exophthalmic goitre, as had been done by a section of the lay press

The selection of cases for operation, he agreed with Mr Dunhill, required the fullest cooperation between physician, pathologist, and surgeon, and many cases were best left alone for six months or longer Preliminary double ligation of thyroid arteries had a distinct value, in his opinion—not as a cure, but as a means of minimising the operative risk Open ether anæsthesia did very well for cases of medium severity, but not for the severe, fibrillating emaciated cases, for which he strongly favoured local anæsthesia If this was preceded by morphia and hyoscine, together with a rectal injection of half an ounce paraldehyde in half a pint of saline, the patient remained satisfactorily quiet throughout the operation Not every patient, however, responded well to local anæsthesia, and any restlessness was a disadvantage both to the patient and the surgeon Rectal anæsthesia he had found unreliable

Frequently he had removed seven-eighths of the thyroid gland—on occasion as much as nine-tenths—and he had never seen a trace of myxœdema in the cases What was the standard of cure? He thought that if a patient could return to work and remain at work, with the ordinary holidays, without suffering relapse, she should be regarded as cured, even though some degree of exophthalmos still persisted

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY

AT a meeting of this Society held on April 7th, Dr E RIVAZ HUNT, the President, in the chair, Dr. RODERIC CLAPHAM showed a case of

Chronic Diarrhœa

The patient was a woman aged 37 Two months ago she came to hospital complaining that for three years she had had diarrhœa, and that it had become much worse in the previous six weeks She had about nine motions daily, they were quite painless, and she was losing weight rapidly

Examination of the abdomen and rectum revealed nothing except slight weakness of the sphincters Examination of the nervous system, however, showed that the case was one of tabes The patient had Argyll Robertson pupils, loss of ankle- and knee-jerks, and commencing perforating ulcers of both feet The gait was normal, Romberg's sign was absent, and there was no incoordination There was some analgesia and paræsthesia of the feet, and of the outer side of the legs and the inner side of the arms

Laboratory tests indicated syphilitic infection, and under treatment by Dr F Lawson at the venereal diseases clinic the diarrhœa improved so that the patient had only two actions a day

Dr J. STANLEY ELLIS read a paper on

Ultra-violet Therapy

After giving a brief history of the development of natural and artificial sunlight therapy, he discussed the advantages and disadvantages of both methods and suggested that artificial sunlight bore the same relationship to natural sunshine as synthetic drugs bear to crude drugs The rays had definite photo-electric photo-chemical, and fluorescent effects on the tissues, and these were the basis of profound physiological changes Dealing with the effects of the rays on cholesterol, on the nerve-endings, and on the production of pigment, all of which were claimed as the cause of the beneficial effects of therapy, he pointed out that the various conditions which responded to treatment fell naturally into four or five groups in which the above physiological changes and others were most marked He also stated that certain drugs and endocrine extracts were activated by the rays in the human body, which in itself made it necessary that the physician and actinotherapist should collaborate The use of ultra-violet rays was, *he said, in danger of discredit owing to the too ardent* claims of enthusiasts Not only was this form of treatment not a cure-all, but in the great majority of cases it was essentially auxiliary to other methods

Dr H M GALT showed microscopical slides of parasites

ROYAL ACADEMY OF MEDICINE IN IRELAND

SECTION OF OBSTETRICS

A MEETING of this Section was held on March 11th, Dr D G MADILL, the President, in the chair

Dr LOUIS CASSIDY described three cases of

HYPEREMESIS GRAVIDARUM

Vomiting in pregnancy, he said, must be differentiated both (1) from gastro-intestinal affections, uræmia, tumours of the brain or spinal cord, meningitis, and latent pyelitis, and (2) from other toxæmias of pregnancy—e g, pre-eclampsia. The term must be reserved for cases in which vomiting and pregnancy were synchronous and in which no cause other than pregnancy could account for the vomiting

Morning sickness, he had found, was more frequent in primiparæ than in multiparæ, and occurred between the 8th and 16th weeks It seemed to affect those carrying a male rather than those carrying a female child. After referring to Lindemann's post-mortem findings and the work of Miller on vagal control, Dr Cassidy drew attention to the psychical nature of some of the cases, remarking, however, that dogs and cats also suffer from vomiting in pregnancy Some authors (principally French) had pointed out that in hyperemesis there was deficiency in the corpus luteum, which was supposed to counteract the toxins generated by the chorionic villi According to Pinard, the occurrence of hyperemesis in conjunction with vesicular mole was as high as 19 in 27 cases In the hands of Seitz, van den Bergh's test showed an increase of bilirubin in the blood in hyperemesis over and above the normal increase during pregnancy

In cases of neurotic or reflex origin, said Dr Cassidy, the symptoms were intense thirst, bodily weakness, and emaciation, although distressing to the patient, they gave no real cause for alarm, and disappeared as pregnancy advanced In the toxic variety, on the other hand, the pulse-rate was increased in spite of rest in bed, the tongue was furred and dry, the skin was dry, and the urine, diminished in amount, contained pathological elements such as albumin, casts, and acetone Coma, delirium, and insomnia might occur and the condition was very grave The following were three cases recently treated successfully on different lines —

CASE 1 —A woman, aged 29, nine weeks pregnant, was admitted to hospital in an emaciated condition, vomiting constantly Her blood count was very fair, her blood pressure normal, but her urine, though normal in quantity, contained some albumin and casts She showed little response to treatment by rest in bed, starvation, lavage of the bowel, and purgation Corpus luteum was given in 1 c cm doses hypodermically, with little or no result The patient admitted that both she and her husband were anxious not to have a child at the time

Following the practice of Malinin of the Frauenklinik in Saratow, about 25 c cm of the patient's own blood was withdrawn from the median basilic vein and was reinjected in six different places This treatment was twice repeated at intervals of three days The patient began to improve rapidly The local parish priest visited the patient at this time, and it must remain undecided whether the Church or Medicine was responsible for the successful issue

Case 2 —Mrs B , aged 28, had been married four years, and was seven weeks pregnant She had had one full-term pregnancy two years before On admission her general condition was very bad She showed great fatigue and anæmia , her blood pressure was 110-80, and her pulse-rate 90 , the urine was scanty and contained albumin, casts, and acetone , the skin was dry , the tongue was dry and furred with sordes around lips and she suffered from great thirst

The uterus, which was retroverted, was replaced and a pessary inserted For the rest the treatment consisted of complete rest, purgation, lavage of the bowel, and rectal administration of sod bicarb and pot brom Corpus luteum extract proved ineffectual After about two weeks the patient began to improve and eventually she was discharged cured

Case 3—A primipara, aged 21, was 8 weeks pregnant The uterus was in the normal position, the pulse-rate was 84, there was slight anæmia, and the urine was scanty, containing albumin, casts, and large quantities of acetone The patient vomited on making the slightest movement in bed The usual treatment of purgation, lavage of the bowel, and administration of sod bicarb per rectum was given Corpus luteum had no effect given hypodermically Irradiation of the hypophysis was attempted

The first signs of improvement were noticed about 14 days after admission to the nursing home and followed rectal administration of pot brom gr 30 in four ounces of water morning and evening

Discussion

The President referred to a previous discussion on hyperemesis in early pregnancy,[1] and to the great stress then laid by Dr FitzGibbon on the neurotic element and its treatment by psychotherapy He personally thought that a great many of these cases were toxic in origin He had administered thyroid extract in a couple of cases, but had not found it of any value Dr Cassidy was to be congratulated on not having had to induce therapeutic abortion in any of his cases It was always taught that if starvation, thorough elimination, and rectal enemata did not stop the vomiting in these cases, then pregnancy should be stopped , yet Dr Cassidy's three cases had all been treated in different ways, and it had not been necessary to stop pregnancy in any of them

Dr Bethel Solomons said that if women were unaware that vomiting occurred in pregnancy few would suffer from it Patients were often in doubt as to their condition because they did not vomit, although told by their friends that they ought to do so He was a firm believer in the neurotic or psychological element as an ætiological factor, both in the mild and severe forms of vomiting Irrigation of the stomach had a good effect in all cases When done gently it caused no shock, and it had the excellent effect of (1) removing the backflow from the liver, and (2) clearing up hysterical cases because it was unpleasant It was also useful because purgatives could be left in the stomach, and he was surprised that Dr Cassidy had not adopted so simple and excellent a form of treatment in any of his cases He believed, too, in removing such things as basins from the patient's bedside, and in putting the patient on a full diet free from all greases While holding the view that most cases were of the psychological type, he had full knowledge that there were some few which were toxæmic and must be treated as such In the treatment by subcutaneous injection of the patient's own blood, it was interesting to note that the sequence of events had been injection of blood —marked *fright*—cure It was seldom necessary, he thought, to perform therapeutic abortion

Dr Gibbon FitzGibbon thought that the psychical element in these cases was very strong Patients got into the habit of vomiting, and thought that they should vomit While master of the Rotunda Hospital he had found that cases generally responded to starvation, elimination, and enemata, and he had only had to induce abortion twice One of these had died even after abortion These cases seemed to him to respond to all sorts of treatment, and the more he saw of them the more he was convinced of the psychical element in them He thought there was no reason to believe in the toxic element in hyperemesis Vomiting was always more severe in the multipara than the primipara In one case he had tried injecting human blood into the patient, but without any result There was far too much fear of letting these patients carry on, and he thought that pregnancy should be allowed to continue up to the fourteenth or sixteenth week, different methods of treatment being tried till then, before abortion was induced

Dr D Cannon asked if any effort had been made by gynæcologists to visualise the mechanism of the stomach in hyperemesis He had seen two cases in which it had been proved that achlorhydria was present He referred to work done by Prof D P D Wilkie in this connexion, and also to that of a German investigator who had shown that over-regurgitation of bile into the stomach would cause morning vomiting and other symptoms in pregnancy, and had suggested the administration of atropine sulphate Dr Cannon felt that these cases were functional and not toxic He wondered how a retroverted uterus could cause gastric symptoms, and yet he had often found that simple correction of the uterus did effect a cure An American observer had proved that duodenal stasis was present in hyperemesis

Dr G Tierney said that it was difficult to decide which cases were toxic in origin and which were not He considered that a number of them had a psychic as well as a toxic element He mentioned a paper recently published by Dr W E Levy, of New Orleans, in which it was stated as evidence of toxæmia that acetone was found in the urine, with diminution in the blood-sugar and in the CO_2-combining power of the blood The paper reported six cases in or about the fourth month of pregnancy They had been treated for a time on general lines without success before coming under his care Then they had been treated with insulin and glucose One woman, who was four months pregnant, and had been vomiting continuously for three weeks, was in such a state that he thought he would have to resort to therapeutic abortion, but after intravenous injection of insulin and of a 10 per cent solution of glucose, the vomiting had ceased, so that the patient went on to full term

Dr E Harvey suggested that the cases which were helped by insulin were those in which acidosis had been the cause of the vomiting Insulin would not necessarily be effective in other cases in which acidosis was not the cause of the vomiting

Dr Cassidy, in reply, said that he did not think the psychical effect of washing out the stomach would be sufficient to justify the distress which it would cause to these patients Most of them were of a neurotic type Generally, vomiting developed about the eighth week and stopped about the sixteenth week , it seemed that the vomiting diminished as the resisting powers of the body increased Acetone would be found in the urine in any case of starvation and should not be taken as pathognomonic of hyperemesis gravidarum An increase of bilirubin in the serum was, he thought, a sign that the case might be toxic From the clinical point of view it seemed that the important thing was to try to distinguish between the toxæmic and the purely neurotic case

Dr D Cannon read notes on a case of retroperitoneal fibroid, and a discussion followed

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[1] The Lancet, 1926, i , 76

Reviews and Notices of Books.

EPIDEMIC DISEASES OF THE CENTRAL NERVOUS SYSTEM.

By ARTHUR SALUSBURY MACNALTY, M.A., M.D. Oxf. London: Faber and Gwyer, Ltd. 1927. Pp. 194. 12s. 6d.

THIS book is an expansion of the Milroy lectures for 1925. In publishing them in handy form Dr. MacNalty has done a real service, not only to those who specialise in epidemiology or in neurology, but to every member of the medical profession who wants to find out where we stand to-day in our knowledge of these comparatively modern types of epidemic disease. As the author says, "the increasing incidence of these diseases in Europe and America and the fact that they bring in their train new problems which concern the epidemiologist, the medical officer of health, the practising physician, and the public health administrator, demand that available information on the subject shall be collated and examined from all possible points of view." These words epitomise exactly Dr. MacNalty's book. It gives a concise account of the most important facts bearing on the subject with which it deals, and has the advantage of being written by one who, from his wide experience and ripe judgment, is able to present them in a balanced and assimilable form.

The three diseases here considered are cerebro-spinal fever, acute poliomyelitis, and encephalitis lethargica (epidemic encephalitis). These are compared and contrasted from various, but, in each case, from similar, points of view. The book is conveniently divided into six parts. After a short introduction Part I. deals with the increasing susceptibility of the central nervous system to attacks of epidemic disease. Various theories attempting to explain this are discussed and considered; thus the theory of increased facilities for spread, the occurrence of epidemic cycles or waves, and also the epidemic "constitution," a term which, as the author says, "is admittedly vague." Whilst paying adequate consideration to each of these the author puts forwards the suggestion that, possibly, it may in the future prove more fruitful to give "the soil" at least equal consideration with "the seed." In this connexion he refers to the striking fact, which cannot be overlooked, that the earliest appearance in epidemic form of the present wave of encephalitis lethargica coincided in time with the peak (or should we say the beginning of the plateau) of distress due to war—it was the winter, 1916–17—whilst it coincided in place with the area in which that distress occurred in its greatest intensity—viz., Central Europe. If this was merely a coincidence it was a remarkable one. The question as to whether the human nervous system is becoming more susceptible owing to the rush and strain of modern life—a very real possibility—is discussed, and the suggestion is tentatively put forward that we may be dealing with organisms which, if not new, are at least changing their pathogenic propensities.

After an interesting survey of the evidence as to the possibility of these diseases being transmitted from domestic animals the author finds it "not proven." Part II. relates the steps by which the epidemic nature of diseases of the central nervous system has gradually been recognised. The chapters in this section deserve careful study, for although these diseases are officially notifiable as infectious, yet in practice their mode of spread is so obscure and the actual danger of direct infection seems so slight that it is sometimes difficult to persuade doctor or patient that serious precautions are necessary. In reading Dr. MacNalty's reasoned and convincing account it should be remembered that the author himself has played no small part in helping to lay the foundations upon which our present knowledge of such infectivity is being built. Parts III., IV., and V. deal with the history and epidemiology of each of the three diseases in turn and are full of information presented in attractive form. In the concluding chapters (Part VI.) the means at present available for preventing the spread of these epidemic diseases are discussed. Stress is laid on the importance of recognising "abortive cases," which probably play an important part in the spread of all three diseases. The necessity of treating each individual case as a potential source of infection is duly emphasised, both as regards personal isolation, disinfection of the patient, and his surroundings. Unfortunately, our knowledge is still slender as to the duration of such infection, hence the difficulty in laying down any definite rules as to how long these precautions should be continued.

In his conclusion Dr. MacNalty points out that, although an alarming increase in epidemic nervous diseases is shown by the notification returns, the actual increase is probably considerably greater. This is certainly true in the case of encephalitis lethargica. So long as medical practitioners are content to dismiss as "influenza" every slight febrile attack which they meet with, although the data for such a diagnosis may be quite inadequate, so long will our official statistics remain far from true estimates.

An additional recommendation of these lectures is the charming style in which they are written.

HUMAN PATHOLOGY:

A Text-book by HOWARD T. KARSNER, M.D., Professor of Pathology, School of Medicine, Western Reserve University, Cleveland, Ohio. With an introduction by SIMON FLEXNER, M.D. London and Philadelphia: J. B. Lippincott Company. 1926. With 20 illustrations in colour and 443 black and white. Pp. 980. 45s.

IN this text-book Prof. Karsner proceeds along conventional lines in the presentation and treatment of his subject. The book is divided into two parts. The first deals with general pathology, the retrogressive changes, disturbances of circulation, inflammation and infection, the progressive changes and tumours being included in this part. Part II. is devoted to systemic pathology, and in the several chapters the diseases of the various systems and organs are discussed. A table or synopsis of the contents is given at the beginning of each chapter in the section of general pathology, a feature on which the author in his preface lays some stress, and at the end of every chapter is a well selected list of references which, while making no pretention to completeness, will admirably serve to direct the student in his more detailed reading. There are numerous illustrations, both photographs and drawings; many of them, we are told, were made under the direction of Dr. Simon Flexner for a book which he himself intended to write. They are clear and well produced and successfully fulfil their purpose of clarifying the text. The book is well printed and there is a good index.

Prof. Karsner's text-book is a notable addition to pathological literature; the teaching is sound and orthodox, and the subject is treated in the widest sense. The amount of information contained between its covers is remarkable, and debatable points are fairly and adequately discussed. If we have a criticism it is that the student may find it occasionally rather tough reading. The author has not attempted a smooth dogmatic account of his subject, but wherever any doubt exists he mentions the views and observations of different workers. The result is occasionally a rather jerky unconnected description loaded with detail, and the inexperienced reader may feel the lack of a definite lead. It might be replied, however, and with perfect justice, that pathology has passed the stage of smooth dogmatism, and that the student must learn to think for himself. We believe this to be so, and that Prof. Karsner's book will enjoy the popularity that it merits.

DISEASES OF THE NOSE AND THROAT

Third edition By Sir STCLAIR THOMSON, M D, F R C P, F.R C S, Consulting Surgeon for Diseases of the Throat, King's College Hospital London Cassell and Company 1926 Pp 943 45s

THE third edition of this excellent work remains substantially the same as its predecessors New sections have been written on some rare conditions, such as chorditis fibrinosa and dermoid polypi of the nasopharynx The articles on a few subjects which have recently been prominent, such as œsophagectasia, ozæna and cocaine substitutes, have been rewritten or rearranged It is in the sections on operative treatment that the principal alterations are to be found The operation of tonsillotomy is very properly omitted, the method of laryngectomy from above downwards takes the place of excision from below, and lateral pharyngotomy is described in full detail New illustrations have been given where required in explanation of the new matter It need only be added that the very high standard set by Sir StClair Thomson in the earlier editions has been fully maintained in the present volume, which is one of the best and most complete books on its subject in the English language

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LIPOID TREATMENT OF TUBERCULOSIS.

Das Problem der Tuberkulose Behandlung mit Fettstoffen By FERDINAND MATTAUSCH Berlin and Vienna Urban and Schwarzenberg 1926 Pp 66 M 2 40

APPROXIMATELY half of this small monograph is devoted to a clinical inquiry into the treatment of various forms of tuberculosis with a non-specific lipoid known as gamelan or lipomykol with which encouraging results were obtained The rest of the work is a very brief summary of some aspects of the biochemistry of the fats and lipoids in tuberculosis This summary is by no means exhaustive, the excellent text-book on the Chemistry of Tuberculosis by Gideon Wells, L M De Witt, and E R Long published in 1923 seems to have escaped the author's notice The various fatty substances extracted from the tubercle bacillus, the lipoids in tuberculous tissues and cellular and humoral resistance in relation to the lipoids are described briefly The reader is spared whole pages of graphic formulæ, which too often loom disproportionately large in monographs of this kind, and technical laboratory details are almost entirely in the background The bibliography is, on the whole, good considering the amount of work annually put forth on this subject Too much space is devoted to gamelan, of which the exact formula is not given, and too little to the broader aspects of the subject to make the book a well-balanced summary

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NATIONALITY

The Racial Basis of Civilisation By F H HANKINS, Professor of Sociology in Smith College, New York London and New York A A Knopf 1926 Pp 384 14s

DOCTRINES of racial superiority have always existed among this or that chosen people, in recent times their rôle has been much exalted Aryanism is the original source from which have been derived teutonism in Germany, celtism in France, and anglo-saxonism in England and America, and these cults have been pursued partly by serious scholars and more often by patriots and partisans, until each nation is convinced of its inherent superiority and the grandeur of its destiny. Prof Hankins sets to work to pull these doctrines to pieces, and this he does in a bright and interesting way and with a success of which his readers must judge for themselves English, French, and Germans are mixtures in varying proportions of the same components Nordics, Alpines, and Mediterraneans are everywhere in Western Europe Nationality is the precursor rather than the result of race, which is a unity created by social development and similarity of intellectual factors which lead to unity of blood The "English race" is a cultural, not a zoological unit The essential thing which gives any nation a just position of superiority in the world is that it should be the product of a crossing of able stocks—a combination, for example, of the aggressive adventurous Nordic with the reflective artistic Mediterranean This gives a greater range of variation and a higher probability of getting more of those biological accidents which we call geniuses It gives, too, a better chance of finding new lines of cultural development which soon amalgamate the hybrids into a good sociological species Such in brief is the author's chief thesis He puts it forcibly, and there is probably more to be said on the other side than he allows, but he is thoroughly interesting all the time The book is beautifully produced

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SYMBIONTICISM AND THE ORIGIN OF SPECIES

By I E WALLIN, Sc D Professor of Anatomy in the University of Colorado School of Medicine London Baillière, Tindall and Cox 1927 Pp 171 13s 6d

THERE are, says Prof Wallin, two views of the nature of the mitochondria which have engaged the attention of almost every respectable cytologist in recent years One is that they are cell organs the other that they are symbiotic micro-organisms He does not mention the third—that they are artefacts He has convinced himself that the second view is correct Morphologically they are like micro-organisms, and in cultures he has obtained minute bodies of a tolerably similar appearance The evidence is not conclusive It is conceivable for example that parts of cells may be cultivated in vitro as well as whole cells, the viruses which cannot multiply apart from cells may obviously be of this nature It is indeed, difficult to see how convincing proof of the organismal nature of mitochondria could be obtained, for in the last resort one would come to the insoluble problem of what exactly an organism is and whether things exist *which are partly organisms* However, taking the nature of mitochondria as settled, Prof Wallin goes further than those who have upheld his view before for he claims that this general symbiosis plays a fundamental rôle in the evolution of new species His book is readable and interesting, and there is a useful bibliography The speculations include a body of facts which need careful consideration, his interpretation of them may turn out to be correct

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THE POSITION OF SCIENCE

Gallio or the Tyranny of Science By J W N SULLIVAN London Kegan Paul, Trench, Trubner and Co 1927 Pp 96 2s 6d

THE booklets of the "To-day and to-morrow" series vary a great deal in quality, this is one of the best which we have seen It puts the difficulties into which physical science has landed itself by its exuberant progress with point and wit, and with as much clarity as the present apparent impasse will allow The Victorian "scientist" was essentially a mechanician and it seemed clear to him that the mathematical statement of the world which he was elaborating must in the end prove complete and satisfactory as a summary of the facts if not as an explanation of them The philosopher who is now advancing at the edge of such apprehension as is possible to the favoured few realises that the world is not a fact but an evolutionary process in which the separation of mind from matter and of mind from mind must be regarded as unreal According to the author, the concrete facts of experience are better expressed by the artist or the poet than by the physicist, the authentic tidings of invisible things have been distorted in their scientific analysis It is all very interesting and stimulating and very difficult to understand One feels envious of the next generation or the next but one to whom the spirituality of mathematical physics will be plain sailing

JOURNALS

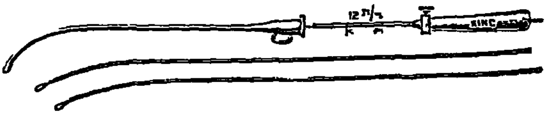
British Journal of Children's Diseases Vol XXIV January–March —Dr J D Rolleston contributes a paper on recent advances in the ætiology, diagnosis, prophylaxis, and treatment of the acute exanthemata, his conclusions being as follows · (1) The *Streptococcus hæmolyticus scarlatinæ*, described by the Dicks, has more claim than any other organism to be regarded as the causal agent of scarlet fever (2) Active immunisation against scarlet fever by injection of scarlatinal toxin is still in the experimental stage, but is full of promise (3) The use of a concentrated scarlet fever antitoxin deserves trial from an early stage in all severe cases (4) The diplococcus described by Tunnicliff is more likely to be the causal organism of measles than any other hitherto described (5) The prophylaxis of measles by injection of convalescent serum is of great value in affording temporary protection from an attack or in diminishing its severity if it occurs, and is specially indicated in ill-nourished children under the age of five living in unhygienic surroundings (6) Active immunisation against measles which offers a more permanent protection against the disease is still in the experimental stage (7) There is no justification for regarding alastrim as ætiologically distinct from small-pox (8) Herpes febrilis and herpes zoster, though closely related are ætiologically distinct from one another —In a paper entitled Petit Mal or Cardiac Disturbance Dr G A. Sutherland, who records two illustrative cases, remarks that, in connexion with attacks suggestive of petit mal tachycardia may be present without other obvious cardiac changes The symptoms of an attack are present only during the period of paroxysmal tachycardia and usually accompany the onset of the new cardiac rhythm An attack is often definitely induced by excitement or bodily exertion While an organic basis of disease in the heart may be present, a similar condition of paroxysmal tachycardia may occur in hearts organically sound —In a paper on Microcephaly Dr T Brushfield and Dr W Wyatt describe the pathological changes in ten cases of true microcephaly observed at the Fountain Mental Hospital They point out that whereas all the cases during life were more or less alike, the pathological lesions differed considerably Whatever the lesion in the cerebral hemisphere the result was the same—viz , destruction of the upper neurons of the pyramidal tract The unantagonised influences from the extrapyramidal tracts and probably from the cerebellum also, which is usually well-developed, explains the clinical features of paresis and rigidity — Dr R Richards contributes a paper on bacillary dysentery in Aberdeen, his conclusions being as follows (1) The occurrence of true bacillary dysentery among the general population is not so uncommon as is usually stated (2) Treatment by magnesium sulphate is almost specific for bacillary dysentery The diet is almost equally important No food or liquid which leaves a residue is permissible (3) Apart from bacteriological examination the following points are of diagnostic assistance (*a*) the macroscopic appearance of the stool, which is like scraps of flesh in raw meat juice , (*b*) the microscopic appearance of the stool, a smear of the fæces showing abundance of polymorphonuclear leucocytes Many "ghost" cells and macrophages —The abstracts from current literature are devoted to tuberculosis

Chinese Journal of Physiology —The Chinese Physiological Society, the headquarters of which is at the Pekin Union Medical College, is composed of native and foreign physiologists, biochemists, and pharmacologists, and its members have long felt the need of a publication to stimulate scientific research in that backward country They have, therefore, with admirable courage, launched this quarterly journal as a symbol of the desire of the Chinese to help themselves, and to do so in " the spirit of international goodwill and cooperation manifested by all men of science " The journal is printed in English, as the language most practically useful to the bulk of the physiological world The first number contains articles on the effect of starvation on the intestinal epithelium of the albino mouse, the aconite of Hunan, which has properties comparable with the European varieties , bastard anise poisoning, ephedrine anæsthesia mixtures, the proteolytic ferment of *Cucumis melo*, a Chinese cantaloupe, a method of anastomosing vessels with aluminium couplers studies on the denaturation of proteins, and other original contributions of merit The assumption by a Chinese society of national responsibility for contributing to the scientific progress of the world is welcome

New Inventions.

A EUSTACHIAN SOUND

Success in the treatment of middle-ear deafness depends upon a correct Eustachian catheter technique, and inflation of the tympanum and dilatation and medication of the tube have alone survived the test of experience Most aurists have devised some appliance to this end, or favour some modification or elaboration of technique which has been of help to them in practice The accompanying illustration of my own small contribution to the matter represents a graduated carrier and a set of flexible Eustachian sounds of stainless steel. The carrier consists of a convenient handle and a stem The latter measures just 36 mm , the length of the adult Eustachian tube, and is divided into three sections of 12 mm each by marks which inform the operator of the depth to which the sound has penetrated the tube When introduced into the catheter as far as the second division (24 mm) the bulbous end of the sound is at the isthmus tubæ, a common site of stricture , when the third and last division is reached, the tip of the sound should have passed the tympanic ostium They cannot replace the indispensable gum elastic bougies of Hunter Tod, nor are they intended to do so, for it is obvious that in the case of a tortuous Eustachian tube they would be both useless and dangerous But in a straight tube they will pass an obstruction before which the gum elastic bougie bends back and reappears in the pharynx They have made it possible to introduce a Weber Leil's inner catheter beyond an obstruction otherwise impassable, and in one case of Ménière's symptom-complex with Eustachian obstruction they have given relief where other methods have failed The graduated carrier also enables a roughened wire armed with a cotton-wool tip impregnated with solution of silver nitrate or other medicament to be introduced for a known distance into the tube Atropine ointment so applied will relieve some cases of tinnitus, even when otosclerosis is the cause The sounds can be sterilised by boiling, but cannot break and leave a piece impacted in the Eustachian tube, as the ordinary celluloid sounds have been known to do There is little originality in this application of well-known principles to a special purpose, but the work for which it is devised is very difficult, and every little helps



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F Pearce Sturm, M Ch Aberd ,
Leigh Infirmary, Lancashire

THE LANCET.

LONDON SATURDAY, APRIL 16 1927

EVIDENCE AND RUMOUR

Dr Bernard Hart s recently published book on Psychopathology "[1] is an expansion of his Goulsman lectures, which were fully reported in our lumns at the time of their delivery [2] An added say on the "Psychology of Rumour," originally itten during the war, now brings before a wider blic an analysis of a form of behaviour that involves r activities more intimately, perhaps, than intellectual pride will readily accept Rumour depends only upon accuracy of transmission, but primarily on the accuracy of the report of the first individual the series concerned in its transmission, and Dr rt accordingly begins with an examination of psychology of evidence Historians seem to have the first to investigate the reliability of evidence, formerly they did as many of us do now, they pted the moral character of a writer as the test his reliability Now, however, whilst moral acter remains important, they take into account y possible condition which may have exerted an ence upon the particular statement under examina-, the source of the witness's knowledge, the interval separating him from the events in tion, his views and prejudices, his profession, ion, and political party They consider, moreover, only whether the witness is deliberately lying, but ther and how far he is unconsciously perverting truth owing to the factors just mentioned On psychological side Stern, of Breslau, carried out ainstaking research and by actual experiment t in the most complete and definite manner two ly held views, that evidence given with the best wledge and honesty is a correct reproduction of ality, and that evidence which is shown to be must be due to deliberate lying, or at least to able carelessness In addition, though detail and racy are both diminished by lapse of time, the ess's belief in the truth of his evidence is little ted Legal writers have noted the effect of estive questions of discussion subsequent to the t, of prior knowledge and interests, and the ulses to assign satisfying motives and to round story

the factors noted above Dr Hart applies in conceptions employed in modern psychology word "complex" has now passed into common h, and if its meaning and full implications were rstood with conviction man's attitude to man d be radically changed A complex is a system eas with a certain affective load, or emotional e, which tends to produce trains of thought ng in a definite direction, and the complex may its action without the individual himself being least aware that his thinking is so directed An erroneous belief thus formed is given a superficial plausibility by a process of self-deception termed "rationalisation" The statement that the conduct and thought of an individual are mainly directed by reason is opposed to the teaching of modern psychology, much of the thinking which we imagine to be rational is in reality the result of non-conscious complexes, and the reasons with which we support it are not its basis but secondary products—rationalisations—that serve to hide irrational origin Even the first stage of memory—perception—is influenced by endogenous factors, complexes exercise a selective action upon it, we see what we are interested in seeing what we expect to see, and are unaware of our interest or our expectation In the second factor—conservation—perversion may be produced by simple forgetting and by active forgetting or repression, whereby elements may be essentially altered in their character The third process—reproduction—is influenced by suggestive questions, or by the witness being in the centre of the stage, when the grandiose or "self-assertion" group of complexes comes into action, here arises the impulse to say something effective, to round off the story and fill in the gaps. When he discusses rumour Dr Hart disagrees with those writers who see in crowds intrinsically different mechanisms from those exhibited by their members in isolation Both Le Bon and Conway assume that the conduct and thought of the individual are mainly directed by reason whilst emotional behaviour marks the crowd, but the difference is only one of degree. Herd instinct is one of the cardinal factors responsible for the non-rational type of thought and determines the major part of our individual belief and rules of conduct Genuine rational thinking constitutes but a small part of our mental activities, and in a crowd even this small part may be abrogated so that non-rational thinking becomes more obvious and unrestrained In war-time rumour there is a probability that widespread and fundamental complexes determined its generic types Stories of atrocities satisfy one such complex, and the industrious propagation and general acceptance of the report of an enormous increase in the illegitimate birth-rate seem to have owed their existence to phantasies of an obviously sexual origin But the influence of herd instinct is such that, when maximally stimulated, "its action overwhelmingly dominates the mind, non-rational opinions are disseminated with prodigious ease, and the rational activities, with their capacities for cool criticism, are at a low ebb"

Though written with special reference to a time of war, these last observations can find application in other cases of strife between nations or communities. Except in their form they contain little that has not been enunciated by philosophers of all periods, and that they remain true throughout the ages is a testimony to the strength of the instinctive and emotional forces that influence human conduct

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[1] Cambridge University Press Pp 156 7s 6d

[2] The Lancet, 1926, i, 585, 700, 795

THE RETAINED TESTICLE

The imperfectly descended testicle, the mechanism of its descent, its pathology and its treatment are of perennial interest to the surgeon, and the Hunterian lecture by Prof A H Southam and Miss E R A Cooper, which we publish this week, will be welcomed as an important addition to our knowledge It is pointed out as a remarkable fact that but little light has been thrown on the subject since the days of John Hunter Possibly this is because the accuracy of his observations and the soundness of his inferences established the main anatomical facts and left only details and special points to be elucidated by subsequent observers ASTLEY COOPER, in his monograph published in 1830 on "The Structure and Diseases of the Testis" gave an account of the descent of the testis and the anatomy of the imperfect organ, but remained silent as to its physiology and pathology It is because of their bearing on these two last problems that the investigations recorded in the present Hunterian lecture are especially valuable

It is generally recognised that usually, but not always, an imperfectly descended testicle in an adult is functionless as regards spermatogenesis, though it is generally (but again not always) able to produce the secretion necessary for the development of secondary male characteristics The reason why spermatogenesis is absent has been the subject of discussion and even of controversy Two views have been held to explain it The first is that the failure of function is due to some inherent primary developmental defect, the second is that for the final stages of normal development it is essential for the testis to occupy its correct position in the scrotum To explain this effect of position it has been suggested that the lower temperature of the scrotum is the essential factor for spermatogenesis, and also that in the scrotum the gland is relieved from the pressure exerted by the diaphragm The question is important because the answer must obviously influence treatment If the loss is due to some essential developmental abnormality of the genital gland, the operation of orchidopexy will do nothing to assist the performance of its chief function, whereas if the arrest is due to secondary causes associated with its retained position the surgeon will feel that orchidopexy may not only give a good anatomical result but also—provided it is performed before puberty—promote satisfactory physiological development To solve the problem Mr SOUTHAM and Dr COOPER have compared the macroscopical and microscopical condition of retained testicles with those normally descended in boys of similar ages, and have come to the conclusion that the changes seen in the testicles of adult cryptorchids are secondary They believe that the retained testis develops normally during early postnatal life, but later undergoes retrogressive changes if it has not reached the scrotum Other important conclusions are that the younger the age at which a retained testicle is examined the more nearly does it approach normal structure, and that the further the testicle has descended in pre-adolescent life the more nearly does its structure resemble that of a scrotal gland of the same age The descent of the testicles should be complete, and both should lie in the scrotum by the end of fœtal life, but there is no doubt that spontaneous descent may take place some time after birth The present investigation indicates that it may occur until the child is three years old, but it is extremely improbable after that age Cases have been recorded in which descent is said to have been completed at puberty or even later, but fully authenticated examples of this are very rare, a source of error being extreme retraction of a properly descended gland

It may be concluded that if the functional activity of the testis depends upon its scrotal position during the final stages of development, then its normal anatomical and physiological evolution may be completed if it be placed in the scrotum before secondary changes occur The *latest age for the* operation should be about 12 years, the earliest is some time after the third year, up to which time spontaneous descent is still possible About the age of six years may be taken as a desirable early limit Besides the restoration of function there are other factors which strongly indicate operation In the great majority of cases, even when there is no obvious hernia, there is a patent funicular process or potential hernia The retained testis is also liable after puberty to attacks of disabling pain, possibly due to slight injury or to attacks of inflammation, not to mention the alleged increased liability of the imperfectly descended organ to malignant disease A further important reason for operation is that in many occupations and professions, including the public services, a retained testicle will be a bar to admission As operative procedures, the following are possible orchidopexy, or transference of the testicle to the scrotum, abdominal replacement, or return of the testicle to the abdominal cavity after the hernial sac has been removed, and excision of the misplaced gland Mr SOUTHAM and Dr COOPER conclude—and the great majority of surgeons will agree with them—that orchidopexy is the method of choice Abdominal replacement, though it has had some strong advocates, should not be performed except in exceptional cases, usually where the condition is bilateral, in which orchidopexy is impossible Functional development is extremely improbable when the testis is returned to the peritoneal cavity, and the dangers of the condition are not removed Excision is only very exceptionally indicated in children, though it may be called for in adults where there is one normal scrotal testicle Above all, it should never be done in bilateral cryptorchids unless there is some special indication such as malignant disease or torsion One additional point may be mentioned that is not touched on in the lecture That is, that after a successful orchidopexy growth and development take place not only in the testicle but also in the spermatic cord If the operation be performed in children between the ages of 6 and 12 it is unusual to find that the vas and vessels are too short to permit of transference to the scrotum The imperfectly descended testicle is often a very mobile structure, being sometimes palpable at the external ring or in the inguinal canal, whilst at another time it may be within the abdomen Hence in children it is often possible to transfer to the scrotum a testicle which is apparently abdominal in position After transference there will usually be some tautness about the cord, but in a few months, as the result of growth and development, the structures will probably be as free and lax as those on the sound side The conclusions which Mr SOUTHAM and Dr COOPER have reached are very encouraging They confirm many of the clinical observations that have been made, and put them, together with the operation of orchidopexy, on a sound and scientific basis

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THE POLLUTION OF RIVERS

WHILE the concerted drainage of towns has undoubtedly improved the public health, this improvement has too often been at the expense of the natural drainage channels of the country—its rivers The effects of river pollution are more apparent in a small, densely populated country, with small rivers, like England, than in continental countries with their larger river systems and more scattered populations Almost all our rivers, excepting only the Test and the Kennet, are in fact illegally polluted. A factor which, in England, has led to a relaxed public conscience in this matter is the low esteem in which fresh-water fish are held There is probably no place in England as much as a hundred miles from the sea, and sea fish are obtainable, when desired, everywhere

here It is not only the discharge of untreated or insufficiently treated sewage which has led to the foul condition of many rivers which once contained large supplies of fish. Industry has played a great part in pollution Apart from the advantage of establishing a works on a *navigable* river the proximity of any river, however small, provides water for washing, solution, and other such operations, as well as for steam raising and for cooling It also provides an easy and not too obvious means of getting rid of waste liquors, sludges, muds, pulps, and other by-products of industry The one-way movement of a non-tidal stream and the oscillatory motion of a tidal one, are means both of removing the matter discharged and of merging its identity with that of other pollutions in the stream itself.

The results of the unrestricted discharge of domestic and factory effluents are all too apparent Most organic pollution has the one direct result of making a great demand on the oxygen dissolved in water, often reducing it to less than what is a bare necessity for the maintenance of fish life Mr H W Harvey of the Marine Biological Laboratory at Plymouth has recently called attention in *Nature* to the positively toxic effect—apart from any question of de-aeration—of the products of putrefaction of some of the proteins present in effluents Many inorganic matters in factory effluents, such as acids, alkalis, lead salts (which have done much harm in Wales) are definitely poisonous to the smaller life of rivers on which fish feed as well as to fish themselves It is true, as we have recently taken occasion to point out,[1] that both old and recent Acts of Parliament provide some remedies for the present state of affairs which the many river surveys, conducted by or under the direction of the Ministry of Agriculture and Fisheries, show to be alarming, from the point of view of anglers, nature lovers, and those who consider streams of pure water a necessary feature of a healthy countryside It does not appear, however, in view of the delicate balance of duties, interests, local advantages, both in rating and employment, from unfettered industrial development, that much will be done by attempts to enforce rather feeble enactments Much can, nevertheless, be done, especially by members of the medical profession, to quicken the conscience of all concerned with rivers, sewage works and factories The Thames Conservancy Board is ever watchful and the Port of London Authority is understood to have special powers of its own The surveys above mentioned have aroused much local interest and medical officers have done good work in the matter The real difficulties attending the treatment of such discharges as those sent out in the winter from beet-sugar works are to be grappled with by the Director of Research on River Pollution who will be appointed within the next few weeks by the Department of Scientific and Industrial Research This officer will have a busy time, as apparently all such problems will be referred to him as they arise. As soon as solutions are found every effort must be made to apply them to actual cases of pollution

When those responsible for river pollution forego their plea of a prescriptive right to pollute, when they find that it is not a necessary result of industry or of "sanitation," that it makes them unpopular with their neighbours, and that all the profits of industry will not be absorbed in rendering its by-products inoffensive, or that sewage treatment should be a means of preventing river pollution, our streams will begin to improve Very little will be done until it is evident that a considerable proportion of the community desire some action There are many once beautiful, well-stocked streams in which now the angler cannot find fish, the boy may be poisoned if he bathes, and the oarsman must labour against more than fluid friction Even these streams could be improved, greatly to the public benefit, by tact, persuasion, and a hint as to legal obligations which might, in the last resort, have to be insisted on

Annotations.

"Ne quid nimis"

HOSPITAL ALMONERS

The small committee, which was later to become the Institute of Hospital Almoners first met in 1907, and it is a tribute to the foresight of its members that the work has steadily developed along the lines then laid down while it has also been found possible in the face of changing conditions, to adapt it without loss of continuity The formation of the Institute in 1922 as an Incorporated Society marked a definite step in the establishment of the movement and one that seemed in accordance with its growing importance A general survey of the work of the last 20 years is included in the annual report of the Institute for 1926 The first quarter of the twentieth century has shown an increase in social legislation which affects the details of an almoner's work in many ways Gradually the State has taken over certain types of social work which were carried through the experimental stages by voluntary agents In these schemes of cooperation with the State the almoner acts as an intermediary between the authorities and the hospital patient She ensures that no patient need go without available treatment through lack of knowledge and provides a directly human point of contact with an impersonal system

A perusal of the reports of the almoners' departments in the various hospitals gives some indication of the growth of the work The almoner helps hospital patients not merely to carry out prescribed treatment in the face of great difficulties, but is often able to help them to re-establish themselves after the dislocation consequent on illness or accident Another interesting feature is the growth of research work, carried out in cooperation with the medical staff In studies of encephalitis lethargica, rheumatism and cancer, for instance, the careful records kept by almoners of after-care and "follow-up" work provide valuable data In certain types of disease, too, the number of readmissions to hospital is appreciably lessened by systematic visiting of patients in their homes The financial aspect of the work has also a real interest and value The administrative expenses of the department are a comparatively small part of the general costs of the hospital, funds for the social work involved being in many hospitals almost entirely raised by appeals to outside agencies, employers and friends, and by contributions from the patients themselves Where however, special provision exists for the needs of the patients the work can be greatly extended For example, the Cicely Northcote Trust of St Thomas's Hospital enables the almoners to promote the welfare of past and present patients to an extent impossible to achieve when no extra funds are available The seventeenth annual report of the Northcote Trust is a record of solid achievement The report emphasises not only the social and economic value of the services rendered, but also the efforts made to obtain a right understanding of the patient's point of view. Last year, for example, the General Strike left its mark on all hospital social service, the Northcote Trust has to its credit during that week of confusion 97 transport journeys with patients, some of them as far away as Southampton and Brighton Of the ordinary doings of the year mention may be made of the insulin work, which affords a good instance of the new problems that face the social service departments year by year After a diabetic patient leaves the hospital ward the supply of insulin has to be maintained This may necessitate arrangements with the approved societies or with the guardians, but there are patients who do not fall into either category There is the patient who can afford to pay for his insulin, but in so doing cripples the family resources, especially when the cost of special diet is added Such a patient may now obtain insulin at cost price through the hospital dispensary That this particular piece of work is welcomed by patients and physicians at St Thomas s is made clear by the chart contained in the report Here is shown a steady increase in the supply of insulin since the beginning of 1925, culminating in a monthly distribution of nearly half a million units in September 1926

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[1] The Lancet, 1926, ii, 714

This is the aspect of the almoners' work which is likely to make most appeal to the public but her sterner duties include the prevention of abuse of hospitals by patients who could afford to pay a private doctor or who are entitled to the services of a panel practitioner and do not require special hospital treatment In order to ensure that candidates for almonerships are fit for these two-fold responsibilities, the Institute of Hospital Almoners insists on a high standard of education and personality in its students Of 42 applicants interviewed last year only 30 were admitted The course of training covers a period of two years, of which four months are spent in the offices of a Charity Organisation Society during nine months under the direction of the London School of Economics, physiology, economics, social legislation and administration are studied, after which 11 months' practical work at a hospital under the direction of an almoner completes the course In 1926 15 appointments of almoners trained by the Institute are reported Practitioners who are consulted as to a profession by educated women between the ages of 20 and 35 may note that the work will be congenial to many women, while 40 guineas is not a heavy training fee for a profession of growing importance of which the remuneration usually starts at £200, the larger hospitals paying £350 or more to their head almoner

CONTAGIOUS ABORTION AND MALTA FEVER IN ENGLAND

THE discovery by A E Evans in 1918 that *Bacillus (Brucella) abortus* of Bang, the organism of contagious abortion in cattle, could hardly be distinguished from *Brucella melitensis*, the cause of Malta fever in man, has turned out to be something more than a bacteriological curiosity Once people began to look for them, examples of human infection with *abortus* were soon found Cases of obscure pyrexia due to this organism were described in South Africa and in the last few years quite a number have been identified in the United States It was obviously only a question of time before the new disease was discovered wherever contagious abortion occurs, which is everywhere that cattle are kept Last year Dr G S Wilson and Miss M Nutt showed that the organism was quite common in the milk supplied in Manchester and now Dr J Bamforth, in a note published on page 818 of this issue, describes two human cases in or near London The remarkable thing is that obvious human infection should be so rare This is quite likely due to the fact that those who drink raw milk are certain to take in small doses of the bacilli and in this way to become immunised without ever having a definite febrile attack, it is known that *abortus* agglutinins are by no means uncommon in the blood of children examined at random If this is the explanation, the absence of a similar immunisation to *melitensis* in the Mediterranean area needs examination, goats infected with Malta fever probably excrete larger quantities of bacilli The two infections have been shown to immunise against one another, hence the proposal to protect man against Malta fever with *abortus* vaccination, which may prove useful when it has been tried on an adequate scale Hence, too, the farmers' custom, widespread in Britain, of running a billy-goat with a herd of cows as a preventive of abortion In old days, before we were protected by a paternal Board of Agriculture, all the goats in Western Europe were no doubt more or less infected with Malta fever, and our ancestors seem to have found out empirically that small doses of *melitensis* scattered about among their herds by contact with goats were to some extent a protection against the loss of calves which was and still is a very serious matter to the cow-breeder How far *abortus* fever may correctly be called a "new" disease is largely a question of terminology If their pathogenic relationships to animals were not so distinct, *abortus* and *melitensis* would be called varieties of a single species and indeed they are at least as nearly akin as the various forms of, for example, diphtheria and tetanus bacilli, all of which give rise to diseases which as far as we know are identical Similarly apart from their pathogenic action it is difficult to distinguish the bacillus of pseudo-tuberculosis in guinea pigs from the plague bacillus The facts raise many fundamental problems for the systematists epidemiologists, and philosophers Practically in the present instance there does seem to be some difference *abortus* infection is generally milder than Malta fever —so mild perhaps it often escapes notice Moreover, as Dr. Bamforth has shown, it cannot be avoided by living in England where one is fairly safe from the real Malta fever

BACTERIOLOGY OF HERPES

IN a recent number of the *U S Public Health Reports* (1927, xlii, 171) Alice Evans records the result of investigations with six herpes and so called encephalitis viruses obtained from different workers Four of these strains were herpetic viruses obtained from human vesicles The fifth was the Beckley strain isolated by Flexner, and the sixth was obtained from the brain of a case of acute encephalitis lethargica by Perdrau From all six samples of virus, either from the glycerinated brain as received from the sender or from the brains of inoculated rabbits streptococci could be isolated by planting a thick emulsion of infected brain tissue in a cooked meat medium In some instances masses of cocci could be demonstrated in smears of brain substance stained by Gram's method Berkefeld filtrates of these brain emulsions heavily inoculated into meat medium also gave rise to cultures of streptococci A culture from one of the cases inoculated into rabbits produced nervous symptoms In addition to the streptococcus (details of the biology of which are not given in the article), the author also cultivated spore-producing rod-shaped organisms from all the strains of virus Details of these organisms, which may also be obtained from cultures of a Berkefeld filter, together with a description of the disease produced in experimental animals are promised in a forthcoming paper

TORSION OF THE SPERMATIC CORD

ACCORDING to Dr Meredith F Campbell,[1] who reports 15 cases seen in six years at the Bellevue Hospital, New York, the relatively few recorded examples of torsion of the spermatic cord are not a true index of the incidence of this lesion Only 120 cases were reported before 1920, since when 17 more have been published Undoubtedly many pass unrecognised under a diagnosis of epididymitis or orchitis and subside without an operation being necessary Moreover, many cases of unexplained gangrene of the testicle which come to operation have probably been due to torsion of the spermatic cord In practically all cases some form of congenital malformation has been found The chief predisposing cause is abnormal mobility of the testicle Nearly half the patients give a history of imperfectly descended testicle on the affected side Other anomalies include a spacious tunica vaginalis, elongation of the globus minor or abnormal attachment of the mesentery to the lower pole of the testis Sudden muscular effort or violent straining is the most frequent immediate antecedent of the condition Three-fourths of those affected are young adults but torsion of the cord has been found in boys and even in infants The onset is sudden with exquisite pain in the testis followed by localised swelling There is often drawing up of the organ, probably due to reflex contraction of the cremaster muscle Then follow nausea, vomiting, chills, fever, and not infrequently pain in the lower abdomen originating in the spermatic cord The temperature in uncomplicated cases is rarely above 100° F, but in some cases may reach 104° With the onset of gangrene the pain diminishes or may disappear entirely In cases in which gangrene does not develop the early tenderness gradually subsides, but for weeks the testicle remains slightly sensitive to deep pressure When the affected testis is in the inguinal canal local and general symptoms are exaggerated and there is often a localised peritonitis The correct diagnosis is rarely made before operation, and depends chiefly on the acuteness of the onset and on the severity of the symptoms, which tend to diminish with the progress of the disease Gangrene or atrophy follow in 86 per cent of cases not relieved immediately Operation before gangrene has occurred has often saved the testis, but it has afterwards atrophied Torsion may be prevented by suturing the undescended testis before puberty to the bottom of the scrotum Treatment consists in immediate operation to deliver and unwind the testicle If the testis and epididymis are viable the cord should be untwisted, the tunica vaginalis inverted, and the organ sutured to the bottom of the scrotum, as was done successfully by Dr Campbell in three cases If the testicle is not viable, orchidectomy should be performed.

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[1] Surgery, Gynecology, and Obstetrics, March 1927.

THE DUAL NATURE OF VITAMIN B

OBSERVATIONS on the physiological rôle of vitamin B (the anti-beri-beri vitamin) have been conflicting, but J C Drummond and his co-workers at University College are clearing the ground Many of their experiments contradict those of earlier workers For instance, E Abderhalden's claim, that there is a great reduction of oxidative activity in the tissues of animals suffering from beri-beri, could not be confirmed, nor could R A Dutcher's observation that the administration of thyroid extract confers benefit on animals suffering from beri-beri The extreme anorexia for the deficient diet may perhaps be regarded as one of the most important consequences of deprivation of vitamin B Many of the observed symptoms, including lessened metabolism and lowered body temperature, are symptoms of inanition; and when other of the experimental results are interpreted in the light of the great fall in body-weight, which always occurs, many of them lose their significance G A Hartwell discovered[1] a quantitative relation between the amount of protein and the amount of vitamin B which favour normal nutrition The workers at University College have confirmed this, they find that when the amount of protein in the diet is as high as 70 per cent, yeast extract to the amount of 16 per cent is required to obtain normal growth, whereas if the protein is only about 20 per cent of the diet, 4 per cent of yeast extract will suffice C Funk and some of the earlier workers held that there was a quantitative connexion between the amount of vitamin B in the diet and the amount of carbohydrate which could be tolerated, but it now seems that the connexion is with the protein rather than with the carbohydrate of the diet Vitamins continue to multiply and evidence has been obtained that vitamin B, as found in yeast extract, is dual in nature, one part being stable and the other unstable to heat in the presence of alkali, it is the stable fraction which negatives the detrimental effect of excess protein M H Roscoe working at the Lister Institute found[2] that young rats, fed on a diet deficient in vitamin B, collapsed with neuritic symptoms about the twenty-fourth day, the collapse could be cured with alcoholic extract of yeast If the rats continued on the same diet, together with the addition of the alcoholic extract, a fresh and very severe syndrome of "pellagrous" symptoms made its appearance These symptoms, which consisted of loss of hair and œdema, yielded to the administration of yeast autoclaved at 120° C for five hours, which had no effect at all upon the neuritic symptoms The pellagrous symptoms in rats were first described[3] by J Goldberger, who also made the observation that human pellagra is cured by administration of autoclaved yeast It has remained, however, for Roscoe to place the duality of vitamin B beyond doubt

POST-GRADUATE INSTRUCTION AN INNOVATION.

PRACTITIONERS seeking post-graduate instruction fall into several categories of which the two chief consist of senior practitioners seeking to brush up the knowledge acquired as students, and junior men who are endeavouring to secure the highest medical qualifications The rapidly increasing numbers of candidates for the Membership of the Royal College of Physicians of London proves there are many of the second category We are interested to learn that in an endeavour to help such candidates the staff of the Middlesex Hospital has just completed a very successful course, specially designed to provide facilities in advanced clinical medicine Every member of the medical side of the staff took part in the course, which included demonstrations and instruction in dermatology, neurology, public health, medical anatomy and pathology, as well as ordinary clinical medicine Candidates were kept fully occupied from 10 A M until 4 P M daily during four weeks, the main work consisting in examining cases in the mornings and undergoing viva voce examination on them in the afternoons Lectures did not exceed four per week, but the clinical material in the wards was supplemented by the demonstration of many cases selected from out-patients We understand that the course proved so attractive that many candidates had to be refused, even so the numbers were such that it may be necessary to limit them more strictly in the future Different hospitals have their own ways of providing such courses in advanced medicine and it is certainly desirable that they should be readily available The success and popularity of the Middlesex course is good evidence of the constant improvement in medical teaching and of the desire for progress amongst the profession at large

MACULAR COLOBOMA

THE ophthalmoscopic appearance generally known as macular coloboma is the subject of an interesting paper by Miss Ada C Mann in the *British Journal of Ophthalmology* for March According to her the title is a misnomer and she adduces arguments to prove that the defect is not a developmental one at all The alternative view is that the appearance is the result of pathological changes similar to those that are seen following localised choroiditis in adult life The theory that coloboma maculæ may be due to a hæmorrhage at birth cannot be altogether excluded, and in this connexion observations on cases which are definitely known to have shown intra-ocular hæmorrhage at birth are much to be desired The theory that is most favoured by Miss Mann is that macular coloboma is a late result of intra-uterine choroiditis from an infective focus derived from the placental circulation some time between the third month of fœtal life and birth She distinguishes between three types The least rare form of the defect is the pigmented type in which there is heaping up of pigment, destruction of the chorio-capillaries but retention of normal retinal vessels which may course over the patch This type points to a comparatively mild attack of choroiditis or one occurring in the later months of fœtal life. The second and rarer type is non-pigmented, in which all choroidal and retinal structures have been completely destroyed and replaced by scar tissue with generally some ectasia of the sclera. This may be due to a choroidal infection in the earlier months of fœtal life when the tissues are less formed and less resistant to attack. A third type is still rarer in which the macular coloboma is associated with abnormality of blood-vessels. A case has been recorded in which a persistent hyaloid vessel emerged from a macular coloboma. Miss Mann points out that by no possibility could a hyaloid artery enter the eyeball at the macula instead of at the disc, and her ingenious explanation is that at a very early period of fœtal life—before the end of the third month—an inflammatory process beginning in the macular region caused an adhesion of an adjacent branch of the hyaloid artery and that a perforation of the optic cup at the weak spot allowed a ciliary vessel to communicate with this so that it retained its patency long after all other remains of fœtal structures had disappeared. Such studies as these have a practical importance, for if *it can be shown that* certain congenital conditions are infective in origin and not developmental, we are at once able to exclude any relation to an innate hereditary defect in these particular cases.

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[1] Biochem Jour 1924 xviii, 785 and 1925, xix, 1075

[2] Chemistry and Industry, 1927 xlvi, 269

[3] Public Health Reports, Washington, 1926, xli, 1924

VACCINES AND THE COMMON COLD.

IN the current number of the *Journal of Hygiene* (vol. xxvi., No. 1) is a paper by Fergus R. Ferguson, A. F. C. Davey, and W. W. C. Topley, describing an attempt to discover whether there is any value in prophylactic inoculation against the common cold. Their results were significant. A population consisting of students of the university and members of the departmental staffs was inoculated during October and November, and the subsequent incidence and severity of colds amongst them was recorded for the period ending on the last day of the following May. The mixed vaccine employed was of a type which has been widely used in this country and contained eight different organisms or groups of organisms; three immunising doses were given at weekly intervals. The experiment was as adequately controlled as it possibly could be, as might be expected in work emanating from the Department of Bacteriology and Preventive Medicine of Manchester University. The population examined numbered 286, of which 138 were immunised and 148 served as controls. Every precaution was taken to ensure that this division was a fair one. For example, a certain number of the population desired to be immunised, whilst others wanted to serve as controls, and it was necessary to guard against the inoculated population containing an undue proportion of individuals who would be influenced in favour of the treatment because they suffered from colds. The relevant facts concerning the fate of the inoculated and the uninoculated are briefly as follows: 138 inoculated persons at risk suffered from 203 colds, giving a mean number of colds per person of 1·47; 148 uninoculated persons suffered from 168 colds, or 1·14 per person. As regards the severity of the infections, the mean duration of the colds in days was 13·0 among the inoculated and 10·7 among the uninoculated, and the percentage of colds associated with fever was 25·1 among the inoculated as compared with 19·0 among the controls. The only possible conclusion is that prophylactic vaccination with the stock vaccine used is valueless, but the investigators are doubtful whether the evidence justifies the conclusion that the inoculations actually did harm. These results are in general agreement with those obtained in two experiments carried out in America in 1921, and constitute a body of evidence which it is difficult to ignore. Influenced by the results of antityphoid inoculations even those who can see little reason to look for good results from therapeutic inoculations have been prepared to accept the value of prophylactic vaccination against colds as well as against many other diseases. But the evidence in their favour has largely been based on uninstructed lay opinion, and Prof. Topley and his colleagues point out that the reports of individual patients are worthless as evidence of efficient prophylaxis; they find themselves in agreement with E. O. Jordan and W. B. Sharp,[1] who investigated the same problem and remarked that "'Satisfied patient' conclusions differ widely from those of controlled statistics." Although the difficulties of adequately controlling methods of treatment in the severer diseases are obvious, the minor maladies are susceptible to a more rigid investigation, and it is to be hoped this type of experiment will be extended. Dr. A. I. Simey suggested not long ago[2] a combined test-effort on the part of medical officers of public schools.

DEATHS FROM DISEASE IN THE CROWN COLONIES.

IN reply last week to a question addressed to him in the House of Commons, the Colonial Secretary supplied a statistical table, singularly complete, setting out the number of deaths attributed to certain specified diseases which occurred in Crown Colonies during the years 1923–25. From this table it is clear that blackwater fever still remains a most potent form of death in the Central African Colonies, especially amongst the European population, and the largest number in a single year (23 in 1925) are recorded from the Uganda Protectorate, while Tanganyika Territory holds the second place in the East, and on the West Coast Nigeria heads the list with a total number of 31 deaths in three years. This most dreaded of tropical fevers hardly features as a cause of death in the other protectorates (of which 39 are cited), save in the case of Malaya, Palestine, and British Guiana. Yellow fever accounted for 19 deaths on the Gold Coast during the period under review, and for 15 in Nigeria. Fortunately it is unknown elsewhere, save in British Honduras where it accounted for one fatality in 1924. Small-pox is recorded as the cause of death in 66 cases in Kenya in 1925, and or numerous others both in East and West Africa, though the returns are obviously far from complete; but no variola fatalities are recorded from the Unfederated Malay States, from British Guiana, or from the West Indies. Epidemic encephalitis has been noted in Kenya (two in 1924), Malta (20 deaths), and the Straits Settlements (2). Epidemic cerebro-spinal fever is the most deadly and widespread according to these returns; thus fatal cases are recorded in all the 39 protectorates and colonies on the list. On the Gold Coast 408 fatalities are recorded, from Uganda 367, from Ceylon 312. Though less prevalent than in West Africa, it is a potent cause of death in the West Indies. It is instructive to note that fatal cases of anterior poliomyelitis are recorded sparingly from Central Africa, the Malay States and Fiji, though the aggregate number from this cause is small (a total of 45 in three years). These are some of the deductions which may be made from figures which must have taken much time and trouble to collect and compile. Those who wish to follow the trend of fatal disease in some of the most important parts of the British Commonwealth should turn to the figures as given in Hansard of April 6th.

MISUNDERSTANDING OF PANEL PRESCRIBING

THE regulation and supervision of prescribing in insurance practice appear still to be misunderstood in some areas. A correspondent who is given prominent place in a responsible Edinburgh journal makes the absurd statement that the total cost of the drugs which a panel doctor may give his patient in a full year must not exceed the sum of 1s. 10d. per person on his list. And he adds, by way of illustration, that 12 doctors were called upon to pay sums varying from £5 to £50 for giving their patients medicines of a total value of more than 1s 10*d* per person on their lists The fact is that excessive prescribing is difficult to define and is only regarded as proven after very careful investigation and review by the panel committee of the area in which the doctor practises In the first instance the figures of the practice under examination are compared with those of the insurance area A striking divergence from the average leads to a minute examination of the prescriptions issued by the practitioner The explanations given by the practitioner of any peculiar or unusual prescriptions are carefully noted and considered by his professional colleagues who know the circumstances of the practice and are in the best position to judge whether the prescriptions are justifiable It is only when the prescriptions given are found to be unnecessarily elaborate or the drugs chosen to be exceptionally expensive or ordered in wasteful quantities that a charge of excessive prescribing can be substantiated The Insurance Acts require that each patient shall receive "proper and sufficient medicine for the adequate treatment" of his illness The practitioner is primarily the judge of what is proper and sufficient, but if the drugs used are unusual in quantity or of exceptionally high cost then the practitioner may be called on by his colleagues to justify the employment of that particular form of treatment, for in the use of public money he must exercise economy, and in the administration of a public fund partly derived from a Treasury grant the authorities have set up machinery for seeing that the money is rightly expended But no hard-and-fast rules have been made and no datum line has been fixed The factors vary with the conditions of each practice and the practitioner is given every opportunity of setting out all the circumstances which in his opinion increase the amount of his drug bill After the panel committee has had the practitioner before them their report is considered by the insurance committee whose function is mainly to see that the standard of treatment of the insured person is not being lowered to the detriment of the service It should hardly be necessary to point out the existence of machinery which safeguards both the patient and the prescriber

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[1] Jour. Inf. Dis., xxviii., 357.

[2] THE LANCET, 1925, ii., 1053.

THE Irish newspapers state that the Government of the Free State is in a position to introduce legislation within the next few weeks to settle the question of medical registration within its boundaries It is believed that the scheme to be introduced will be purely domestic, and will be in addition to, and not in substitution for, the present arrangements for registration by the General Council of Medical Education and Registration If the published forecasts are true, a Register will be established in the Free State, under the control of a Council, and any Irish citizen proposing to practise in the Free State will be required to enter his name on this Register On the other hand, it is suggested that persons other than Irish citizens who desire to practise in the Free State will be at liberty to do so, provided their names are on either the Irish Register or the General Register The existing right of entry to the General Register of persons educated and qualified in Ireland will not be interfered with If the proposed changes do not touch on the position and powers of the present General Council, legislation at Westminster will not be required

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IN connexion with the annual meeting of the French Congress of Neurology and Psychiatry, the Medico-Psychological Society of France has decided to celebrate at Paris, on May 30th and 31st, the centenary of the death of Pinel and of the birth of Vulpian The French Ambassador has asked His Majesty's Government to inform British learned societies of this fact and to convey to them the invitation of the Medico-Psychological Society to be represented at this double centenary Universities, faculties, and societies are asked to furnish the French Ambassador, as soon as may be convenient, with the names of any official representatives whom they may wish to send.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CCXIX

FRACTURES OF THE CLAVICLE

FRACTURE of the clavicle is a very common injury both in children and in adults Treatment should be directed to the rapid restoration of the function of the shoulder-joint, the actual position of the bones or the deformity being a secondary consideration It may be that sometimes the prevention of deformity is considered to be of paramount importance, but these cases, usually young women, are exceptional and require special treatment

Bad results after fractures of the clavicle are nearly always the consequence of elaborate methods of immobilisation intended to "set the fracture" correctly, which tie the arm to the side for a long period and so produce stiffness of the shoulder A consideration of two types of case will serve to prove the contention that preservation of the function of the shoulder-joint is much more important than elaborate fixation of the fragments In the first place, patients from whom, for some reason or other, the clavicle has been altogether removed, whether for new growth or osteomyelitis, show excellent and unimpaired function of the arm and shoulder, in the second place, the victim who survives an accident so serious that because of other injuries the broken clavicle has had no treatment but a simple sling will have a perfectly strong arm, though the collar bone may have united with some degree of angulation and with much excess of callus

Fractures without Displacement

In all those cases, therefore, in which fracture of the clavicle is unaccompanied by displacement no immobilisation is required This applies both to greenstick fractures in children and to fractures of the outer end of the clavicle in the neighbourhood of the coraco-clavicular ligaments in adults The arm should be supported in a sling which should take a good hold of the elbow and support the weight of the limb Every day light massage should be applied to the neck, shoulder muscles, and arm, and the limb should be lifted up to a position of full abduction and supported in this position during most of the massage treatment In three weeks to a month firm union and good function should be secured.

Fractures with Moderate Displacement.

The main problem of treatment concerns cases of fracture of the middle of the clavicle with marked displacement of the bony fragments The sternal end of the bone is drawn upwards by the sterno-mastoid muscle, whilst the acromial end is displaced downwards by the weight of the arm and inwards by the pectoralis major It is not easy to influence the position of the sternal fragment, and treatment must therefore be directed to bringing the distal or outer fragment into as good alignment as possible with the inner end of the bone Two adjustments are necessary—viz, the lifting of the shoulder which takes the outer end of the clavicle with it, and the pulling of the shoulder backwards, so as to exert traction on the clavicle and reduce the inward displacement of its outer end. Both these adjustments are usually quite easy, even without the use of an anæsthetic, although the latter may be necessary in the case of a nervous, frightened patient It is, however, more difficult to maintain this reduction than to effect it in the first place The time-honoured methods which have found so conspicuous a place in text-books consist in fixing the arm to the chest by means of bandages or adhesive strapping But these methods are quite contrary to the principle of conservation of the shoulder-joint function, which, as explained above, should be the main object aimed at Particularly is this true of Sayre's method in which after shaving the chest the arm and chest are enveloped in adhesive plaster and so left for several weeks

The most important act in adjustment of the fracture is the backward pull of the shoulder The surgeon should stand behind the patient and pull both shoulders back, keeping the body in position, if necessary by means of his knee placed between the shoulder-blades Whilst the shoulders are strongly held back, they are fixed in this position by a figure-of-eight bandage which goes over each shoulder and under each axilla, crossing over the middle of the back Or, instead of the simple bandage, a straight splint may be applied across the back of the shoulders which are then tied back to it It is a matter of opinion whether the simple bandage or the splint is the more efficient method and a few further words may be said about each The figure-of-eight bandage ought to be put on over a vest, which will prevent the skin from becoming rubbed or sore The bandage itself should be of stout material—e g , calico—so that it will not stretch, and if in an out-patient there is any doubt as to its being tampered with, it is wise to use a wet starched bandage (made from crinoline muslin) The splint is perhaps neater and lighter than the bandage if it is made of a piece of three-ply wood, but it is apt to get out of position if the patient is at all round-shouldered, when the splint rides upwards This should be prevented by the use of adhesive strapping which fixes the splint to the body below.

After the backward adjustment of the shoulder has been made and fixed, the arm as a whole is raised and so supported by a firm sling, which runs under the elbow and over the opposite side of the neck It is better to have this made of a band of calico or other firm material 6 inches wide than to trust to the ordinary triangular sling The band sling should be securely adjusted at the elbow (making a slit or pocket in the sling for the bony joint) and both elbow and the neck should be protected by soft felt or wool from undue pressure

After-treatment —After the fracture has been adjusted and fixed an X ray should be taken to determine the relative position of the fragments, which may if necessary, be modified when the bandages are readjusted But it is quite unnecessary to secure perfect anatomical restitution and a certain amount of overlapping or of angulation can be ignored without fear of a bad result The third day after the accident, and on every following day, the arm is released from its sling and some massage and movements administered The method and degree of this after-treatment are very important and should only be undertaken by a responsible person accustomed to work with the surgeon Careless manipulation quite defeats the object of the treatment and if a trustworthy masseuse is not available it is much better to leave the arm untouched for a week or for the surgeon himself to undertake the dressing For the first week or ten days (we are still considering a case where there was marked displacement) the daily after-treatment should be carried out with the patient in a recumbent position on a hard couch with the affected shoulder over the edge In this way the tendency for the shoulder to drop down or to be pulled forwards will be prevented The figure-of-eight bandage or the back splint need not be disturbed The sling is removed from the elbow, massage is given to the muscles of the neck and arm, and the shoulder is gently moved to a moderate degree of abduction This abduction movement need only be done once in each treatment After about ten days or a fortnight the bandage and splint may be removed from the back of the shoulders and the treatment carried out with the patient sitting up

Fractures with Considerable Displacement

If the displacement of the fracture should be considerable, taking an upward and forward angulation, and if this occurs in a leisured person it may be wise to begin the treatment by a week or two in bed The mattress should be firm and hard, the patient should lie at the side of the bed with the shoulder and arm over the edge supported on a stool which is on a level lower than that of the bed In this way the weight of the arm makes the shoulder fall outwards and backwards, and as the muscle spasm subsides the bone comes to lie in a good line

Complications

There is probably no long bone in the body the fractures of which are so seldom accompanied by serious complications, or which so seldom require operative treatment Text-books all mention an alarming list of possible special complications of fracture of the clavicle, these being injuries to the brachial plexus, the subclavian vessels, and the pleura or lung It is true that such injuries may be associated with a break of the collar bone when a severe direct blow has been received on the shoulder or over the root of the neck We became familiar with these complex injuries during the war But in any such composite injury, the fracture of the clavicle is only a minor incident and its treatment should be relegated to a secondary place The idea that splinters of the broken bone may be driven into the vessels, nerves, or pleura is probably far fetched if not entirely imaginary, whilst the idea that excess of callus may cause injurious pressure on these structures is still less supported by fact

Non-union of a fracture of the clavicle is exceedingly rare, so much so that its possibility may be ignored For these various reasons open operative treatment of the fractured clavicle is practically never required unless an exposure is demanded for some other reason, and then the broken bone may be fixed by some form of internal fixation, the use of kangaroo suture after drilling being generally the best

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The Services.

ROYAL NAVAL MEDICAL SERVICE

J D Sayers T L J Barry, L P Sayers, and E W Bingham to be Surg -Lts

Surg -Lt -Comdr J B Crawford to be Surg Comdr

ROYAL ARMY MEDICAL CORPS

Capt R L Ritchie to be Maj (Prov)

Capts to be Temp Capts and temporarily relinquish the rank of Capt J A Quin and E A Tozer

Capt P R O'R Phillips is restd to the estabt

ARMY RESERVE OF OFFICERS

Maj J W G H Riddel resigns his commn and retains the rank of Maj

TERRITORIAL ARMY

General List—Lt -Col D Shannon resigns his commn and retains his rank, with permission to wear the prescribed uniform 2nd Lt R M Gordon, late R A F , to be Lt

ROYAL AIR FORCE

Flight Lt J G Skeet relinquishes his temporary commission on completion of service

INDIAN MEDICAL SERVICE

Maj -Gen W H Ogilvie to be Director of Medical Services, and Col W R Blackwell R A M C , to be Deputy Director and Director of Hospital Organisation

Maj -Gen O L Robinson, R A M C , vacates the appointment of Director of Medical Services

Temp -Lts Khushi Ram and Rattan Chand to be Temp Capts

Special Articles.

SCIATICA.

BY JOHN H ANDERSON C M G, C B E,
M D MELB,
PHYSICIAN, RUTHIN CASTLE (DUFF HOUSE)

THE term sciatica is generally used to describe pain referred to the roots, trunk, or branches of the sciatic nerve Sciatic pain may arise from many causes, and the first step in treatment should be an attempt to make as accurate a diagnosis as possible regarding the nature of the cause and its position It is only when this has been done that the practitioner can embark on a line of treatment which he can follow with peace in his own mind and with real benefit to his patient

The sciatic nerve springs from the fourth and fifth lumbar and the first and second sacral spinal nerves, and is widely distributed over the lower limb, both to muscles and skin

Ætiology

Pain in its area of distribution may be caused by —

A.—Causes within the nerve sheath

1 Localisation of a polyneuritis

(*a*) Diabetes (degeneration in nerve filament)

(*b*) Alcoholic or arsenical poisoning (parenchymatous degeneration of small terminal branches)

(*c*) Lead poisoning (degeneration of motor neurons)

(*d*) Syphilis, especially in tabes dorsalis (degeneration the afferent neurons in the posterior spinal roots)

(*e*) Gout

(*f*) Diphtheria (acute degenerative changes in cord)

(*g*) Anæmia

(*h*) As a sequel to herpes zoster involving the sciatic nerve (spinal ganglia affected)

2 New growth involving nerve sheath. syphilitic, tuberculous malignant &c

3 Neurofibrositis (Syn interstitial neuritis or perineuritis of the sciatic nerve, sciatic neuritis, idiopathic or essential sciatica)

B —Causes outside the nerve sheath

1 Pressure

(*a*) Direct pressure, sitting on hard seat, unconscious patient "lying on nerve"

(*b*) Fœtal head during, *or forceps* at termination of, pregnancy

(*c*) Tumours of pelvic girdle or tumours arising in pelvis Includes malignant, syphilitic, or tuberculous disease of lower part of spine or sacrum, carcinoma of rectum ovary, uterus, ovarian cyst, fibromyomata of, or retroverted uterus, tumour or meningitis of lower part of spine or cauda equina, pelvic gummata, psoas abscess, callus after fracture

(*d*) Constipation

(*e*) From static abnormalities, producing an effect through muscular contractions, as in flat-foot and perhaps spondylitis deformans

2 Referred pain

(*a*) Hip joint or sacro-iliac disease, septic, tuberculous, or rheumatic This may also act by direct spread to nerve sheath

(*b*) Knee-joint disease

(*c*) Local irritation at any point of distribution of the nerve

The above furnishes a working classification, but the mode of action of a specific cause may, of course, vary from time to time Thus in spondylitis *deformans* it is doubtful whether the cause of pain in the sciatic nerve is a neurofibrositis, due to the toxin or infection which produces the spondylitis deformans or to irritation of nerve roots, or a pressure effect following a viscero-motor reflex on the part of the adjacent muscles

Differential Diagnosis

The differential diagnosis is often very difficult, but the following points may be noted In diabetes the urine and the blood-sugar should be examined, alcoholic and arsenical poisoning, the history, lead poisoning the gums, and blood for a punctate basophilia, diphtheria the history and cultural examination of nose and pharynx, anæmia, the blood, gout, history. and examination of joints blood uric acid, herpes history and signs of recent scarring, in pelvic tumours as a rule pain is bilateral, less severe, and not limited to distribution of sciatic nerve, tenderness absent after pressure on or stretching nerve, loss of function is early patches of anæsthesia or paresis correspond to root rather than to nerve distribution may be primary elsewhere particularly breast or testicle, rectal and vaginal examination necessary, tumours of cauda equina often show disturbance of rectal or vesical sphincters; in psoas abscess there is inability to extend leg backwards without pain, X ray examination (with stereoscopic and lateral views) is necessary to exclude bony or articular disease of lower part of spine and pelvis, syphilis is shown by history and blood Wassermann reaction in osteo-arthritis of hip-joint X ray is useful and the patient is unable to bear backward pressure on the knee when it is flexed and outwardly rotated so that the foot of the affected side rests on the knee of the sound side These are some of the points to be considered in separating a neurofibrositis of the sciatic nerve from conditions which may simulate it

J P Martin (in THE LANCET of May 22nd, 1926 p 991) puts the position shortly as follows —

> "Most diagnostic errors will be avoided if it is remembered that (1) in sciatica the inflamed nerve is always tender, (2) since the sciatic nerve sends no branches to the front of the thigh any condition in which the pain extends to the front of the thigh or groin is not sciatica alone, (3) sciatica causes no muscular paralysis and no gross sensory loss, (4) it may abolish the ankle-jerk but never the knee-jerk"

Sciatic Neuritis

True sciatic neuritis or neurofibrositis is characterised by changes in the connective tissue which surrounds and binds together the nerve-fibres into nerve trunks The parts affected become swollen and pink, the sheath is distended, and when the inflammatory process subsides there is cicatrisation which frequently causes permanent shortening of the nerve trunk

The pathological condition explains why the pain is generally unilateral, more or less constant, worse on movement coughing or stretching the nerve, and not completely removed by absolute rest, as is the case in lumbago In addition, tenderness is present on pressure over the nerve Treatment should be directed to removal of the cause, when it can be found, as well as to palliative treatment during an attack.

The common causes of sciatic neuritis may be set out in the following groups —

1 Toxic or infective

(*a*) The toxins of acute infections as influenza, malaria, &c

(*b*) From foci of infection elsewhere in body Any chronic infection may act as a primary, but the most usual sites are head sinuses, teeth, tonsils, gall-bladder, kidney, urinary bladder, and, lastly, the alimentary tract as in appendicitis, colitis, diverticulosis, or chronic constipation

2 Exposure to colds and chills, the so-called "rheumatic group"

3 A group associated with spinal disease, particularly spinal arthritis and sacralisation (bony union between the transverse process of the fifth lumbar vertebra and the sacrum)

4 Infection following direct injury as in stabs or gunshot wounds

Continental writers place great stress on the association of spinal arthritis and sciatic neuritis Putti lays down that essential sciatica is synonymous with spinal arthritis Such arthritis is regarded as being generally secondary to congenital abnormalities in the articular facets of the lower lumbar vertebræ Sicard holds that the funicular parts of the fourth and fifth lumbar spinal nerves are involved as they pass through the intervertebral foramina in close relation to the vertebral bony articulations Disease in these articulations may cause pain in the adjacent nerves either by pressure or by direct spread, and can only be detected by stereoscopic and lateral X ray examination

It will be seen, then, that the preliminary treatment of "a case of sciatica" may, in addition to a careful history and clinical examination, demand a great deal in the way of special investigation, including X ray examination of head, teeth, gall-bladder (cholecystography), alimentary canal by opaque meal and enema and of pelvis and spine; an examination of the blood including a Wassermann reaction cultural examination of urine and fæces and investigation of any system or organ to which attention may be directed by the history or physical examination

Treatment of an Attack

General management—The patient should remain in bed, in a warm, well-ventilated room, with the affected limb covered by a special bed sock, and, if necessary, the hip enclosed in a light cotton-wool or thermogene dressing While a soft bed is generally preferred it should not sag so as to cause lateral flexion of the lower spine Splinting is theoretically right but, as a rule, wrong practically, though the leg may be held in place by sandbags or by a pillow between the knees The diet should be light and nourishing, containing plenty of fruit and vegetables if constipation is suspected Alcohol is not advised

Local treatment (*a*) *Anodyne*—Heat is always grateful either as a poultice, hot bricks or sandbags, radiant heat, antiphlogistine, hot-air baths, or the humble hot-water bottle If special appliances are used, a treatment towards bedtime will often help to promote sleep The application of belladonna, mesotan, or analgesic balm along the course of the nerve is sometimes soothing Where other measures fail dry cupping may give relief

(*b*) *Counter-irritant*—Blisters, painting with iodine, or a stimulating liniment have their advocates, but should be used with great care lest a local skin condition be produced, and the last state be worse than the first

(*c*) *Massage*—In the early stages the only massage tolerated is of a light superficial nature, and is most soothing when combined with a radiant heat bath Later on, deep massage may serve to break up nodules and loosen adhesions, but must always stop short of causing subsequent pain

Electrical and injection treatments—These have been fully dealt with by Dr J P Martin in THE LANCET (*vide supra*) This excellent article gives full details, and the present writer can only suggest that in some cases ionisation does seem of value, when other means fail, and that diathermy across the pelvis will occasionally bring relief

Medicinal—Certain drugs are thought to influence the duration of the attack, and among these the iodides hold pride of place A convenient form is Lugol's solution, starting with a drop in a table spoonful of water, three times a day, increasing three drops a day, till 30 drops are taken daily and then reducing at the same rate An alternative is to give ten drops of the tincture of iodine in milk night and morning gradually increasing the dose up to 25 drops and then decreasing In late stages of the attack the combination of guaiacum and sulphur is useful, either as confectio guaiaci co (the well known "Chelsea pensioner") or as tabloid guaiaci et sulphuris (B W and Co) A combination the writer has found useful is pot iod, gr v, sod salicyl, gr x, tr nuc vom, ♏ v, aq chlorof ad ʒss

To relieve pain aspirin, pyramidon, codein, heroin, and morphia are all employed according to the severity of the pain A useful prescription is pulv empirin, gr viii, phenacetin, gr v, sp chlorof, ♏ iii, syr zingib ♏ xv, mucil q s, aq ad ʒss, or as a capsule containing caffein 2 gr, aspirin, pyramidon, and phenacetin 1 gr of each

To aid sleep one may use barbitone, adalin, medinal, allonal, &c The pain is generally worse at night and the time of its incidence will control to a certain extent, the choice of hypnotic A good plan is to give the analgesic half an hour before the hypnotic and if the pain comes early in the night use bromural medinal, or adalin, which act quickly Trional is slowly absorbed, and is most useful when the pain is worst in the early hours of the morning

Surgical—Acupuncture of the nerve sheath is said to be of use during an attack to disperse the exudate, but I have no personal experience of its use When the chronic stage is reached open operation may be necessary to free the adhesions left as a result of the inflammatory process The best results are obtained in those cases where pain is not complained of while the patient is at rest, but is acute on movement, or on placing the limb in certain positions If the adhesions are slight, simple stretching of the nerve may be sufficient

Radiation—Exposure to X rays or ultra violet rays have proved of use in some cases.

Special treatment—This is directed to the removal of any cause, and the time of its application will depend on the nature of the trouble and the state of the patient As a general rule, the sooner any focus is dealt with the better If spinal arthritis is present splinting of the lower spine and pelvis is advocated about the third day A plaster jacket is used for the first two to three months and later a celluloid or similar corset In some of these cases laminectomy to enlarge the intervertebral foramina has been successful

GENERAL MEDICAL COUNCIL.

EXECUTIVE COMMITTEE

AT a recent meeting of the Executive Committee official notification was received of the reappointment of the following members of the Council Dr John Yule Mackay (as representative of the University of St Andrews for five years from Jan 7th, 1927), Sir Arthur Chance, F R C S I (as representative of the Royal College of Surgeons in Ireland for one year from Jan 31st, 1927), and Mr Herbert Lightfoot Eason, M S (as representative of the University of London for one year from Feb 24th, 1927)

Restorations to the Register under Section 14

The following names, erased owing to failure to reply to the Registrar's inquiry, were restored to the Medical Register —

Theodore Bloomenthal, Frank G Cory, Jesudason S David, Alfred L V Davin, G M Earle, G W B Featherstone, Thomas W George, M Grundy, H Hardwick Smith, E B Jones, B W R Divarka Kamalakar, Clayton A Lane, E E McCulloch, Lancelot G McCune, M McGann, James J McKee, Herbert W G McLeod, R M McQueen Ernest Martyn, Wm Miller, Lionel C F Murphy, Albert O Nixon, John Spencer-Daniel, William H Stott, M E Thomson, and J F W Waters

Instruction in Midwifery at Calcutta.

It will be remembered that in 1924 the University of Calcutta failed to satisfy the Council as to the adequacy of instruction given in its two medical colleges, and that in consequence recognition of the medical degrees of Calcutta University ceased on Nov 30th of that year A letter from the Vice Chancellor of the University, dated Jan 27th, 1927, now reported that the University had adopted all the suggestions for the improvement in instruction and standard of examination made by the Council in 1924 that these had been embodied in the Regulations, and would come into operation from 1927 onwards The Council minuted its pleasure at the receipt of this information and deferred further consideration until May, when Sir Norman Walker and Colonel Needham would be able to report personally

Practice in Mauritius

A communication was received from the Colonial Office transmitting a proposed Bill to regulate the practice of medicine and surgery in Mauritius This Bill makes it unlawful for other than duly registered medical practitioners to practise medicine, surgery, or any branch thereof in the Colony, it provides for the registration of any person who holds a diploma entitling to registration in the United Kingdom, or a diploma of Doctor in Medicine of the Faculties of Paris, Montpellier, Bordeaux, Lyons, and Lille, provides for the erasure of a person convicted of an offence which, if committed in the Colony, would be a felony or misdemeanour, or guilty of infamous or disgraceful conduct in a professional respect, permits qualified midwives, dentists, or veterinary surgeons to exercise their respective professions The Executive Committee expressed gratification that Mauritius is taking steps to prevent the practice of medicine by unqualified persons, and informed the Colonial Office (in response to an inquiry) that the L M S diplomas of the State Medical Colleges in India are not recognised as entitling their holders to registration in this country

Reciprocity with North-West Territories, Canada

A communication was read from the Director of the Department of the Interior, Ottawa, transmitting the Medical Profession Ordinance, 1898 together with two Amending Ordinances of 1903 Section 29 of the Ordinance provides for the registration of persons holding diplomas obtained in Great Britain, subject to passing an examination In 1919 the Council extended reciprocity to members of the C P & S of the N W T, and the C P & S of Saskatchewan undertook to issue duplicate certificates of registration to such members as obtained the licence of the N W T after examination Now that reciprocity with Saskatchewan has been rescinded, this arrangement is deemed to have ceased

Professional Practice in the Sudan

A communication was read from the Director of the Sudan Medical Service transmitting the Public Health Ordinance 1924 This Ordinance provides that no person shall exercise the profession or calling of physician, surgeon, dentist pharmacist druggist, or veterinary surgeon except by virtue of a licence granted by the Director of the Medical Department on the recommendation of the Central Sanitary Board in the case of a physician surgeon, dentist, pharmacist, or druggist and by the Director of the Veterinary Department on the like recommendation in the case of a veterinary surgeon Exception is made for any qualified professional man employed by the Government or in the British or Egyptian Army Any person contravening is liable to a fine not exceeding £E 50 or to imprisonment for a period not exceeding six months Section 73 provides a fine not exceeding £E 10, or imprisonment not exceeding three months for any person other than a physician or surgeon licensed under the Ordinance who prescribes, treats or professes to cure venereal disease, or advertises for sale any remedy which is represented as a cure for such disease

Dangerous Drugs Regulations

A communication from the Home Office was read stating that the Under Secretary of State had appointed Sir Humphry Rolleston to be Chairman of the Medical Tribunal for England and Dr A W Mackintosh to be a member of the Tribunal for Scotland, with Dr Wardrop Griffith and Dr Wild substitutes for England, and Dr Adams substitute for Scotland Sir Robert Philip had been appointed Chairman of the Tribunal for Scotland, and Mr E W. Hansell, M A and Mr John Cowan K C, had been appointed Legal Assessor to the English and to the Scottish Tribunal respectively

British Institute of Radiology

The Committee approved of No 12 of the Articles of Association submitted for comment by the Board of Trade, to the effect that no member or associate of the Institute who is not a registered medical or dental practitioner shall accept patients for medical diagnosis or treatment except under the personal supervision of a registered practitioner The Committee suggested to the Board that Section 3 (c) of the Memorandum of Association, which provides for granting diplomas and certificates of merit and efficiency, should be amended by the addition of the words. "and that the holder of such diploma or certificate is not thereby entitled to undertake the medical diagnosis or treatment of patients except under the personal supervision of a registered practitioner"

Medicines and Drugs.

Sir George Newman, who had undertaken to ascertain what drugs and solutions were referred to in the Rules of the Central Midwives Board (No C 5 *q*) on which instruction was to be given, and whether any directions were given as to what drugs the midwife might or might not use in her practice had forwarded the following resolution adopted by the Central Midwives Board at its meeting on Jan 6th, 1927 :—

> "That a midwife is expected to possess competent knowledge of the drugs and solutions used in obstetrics This instruction is part of her education by the approved teachers The Board has never scheduled drugs which may or may not be used by midwives, having regard to the differences of opinion held by recognised authorities The midwife is obliged by Rule E 19 to 'note in her Register of Cases each occasion on which she is under the necessity of administering or applying in any way any drug other than a simple aperient, the name and dose of the drug and the time and cause of its administration or application,' and is answerable [to the Board] for the improper use of any drug"

The Committee resolved that it is expedient that the rules of the Central Midwives Board should include provisions restricting the drugs and solutions to be used by midwives in their practice, and decided to forward a copy of this resolution to the Ministry of Health and the equivalent authorities in Scotland and Northern Ireland

Amendment of Warning Notice No 7

In view of the provisions of the Midwives and Maternity Homes Act of 1926, the Executive Committee decided to recommend amendment of the Warning Notice relating to Association with Uncertified Persons practising as Midwives, by inserting the italicised words —

> "Whereas it has been made to appear to the Council that certain registered medical practitioners have from time to time by their countenance or assistance or by issuing certificates notifications or other documents of a kindred character knowingly enabled uncertified persons on pretence that such persons were under their direction *and personal supervision* to attend women in childbirth contrary to law and whereas such conduct is in the opinion of the Council discreditable to the profession of medicine, and calculated to defeat the purpose of the Statutes made in the public interest for the protection of mothers and infants, notice is hereby given that any registered practitioner who is proved to have so offended will be liable to have his name erased from the Medical Register"

LEEDS GENERAL INFIRMARY —The annual meeting was held on March 30th The report presented makes clear the urgent need for an increase in the voluntary hospital accommodation in Leeds The infirmary at present provides 531 beds and cots, supplemented by 68 beds and cots at the Robert Arthington and Ida semi-convalescent hospitals These two hospitals are not ordinary convalescent hospitals but really extensions of the infirmary to which patients especially surgical ones who require a continuance of hospital treatment, can be transferred The list of patients waiting for admission to the infirmary is very large, and the increase in the patients in the extern departments, whose numbers are not limited by the number of beds, emphasises the necessity for more accommodation An effort will shortly be made to add two new three storied blocks, each with about 100 beds, within the grounds of the infirmary It is suggested that one at least of these blocks should be allocated to paying patients The dental school and hospital are now in close connexion with the infirmary. When the dental school outgrew the accommodation provided for it at the Leeds public dispensary, the infirmary was able to place at its disposal the large out-patient hall which had been replaced by a new department This hall forms an admirable temporary accommodation Some time ago the building of a properly equipped dental hospital was started by the combined efforts of the infirmary, which has provided the site of the University, which has met some of the cost, and of the Dental Board and the local dental profession

THE LISTER EXHIBITION.

RECEPTION AT THE WELLCOME MUSEUM

ON April 7th some 100 people attended an evening reception at the Wellcome Historical Medical Museum, Wigmore-street, London Addresses on the Lister Centenary were delivered by Sir William Watson Cheyne *and others, and an excellent exhibition of* Lister relics was on view The Austrian Ambassador and the Argentine Minister were amongst the guests, and the medical profession in London was fully represented Amongst the many present who personally knew Lord Lister was Mr Henry Jones, whose age is 87, and who was butler both to Lord Lister and to his father before him over a period of 50 years The guests were received by Sir W Watson Cheyne, supported by Sir StClair Thomson and Prof Archibald Young, and assisted by Dr C M Wenyon, Director in Chief of the Wellcome Bureau of Scientific Research, Dr S H Daukes, Director of the Museum of the Bureau, and Mr L W G Malcolm, Conservator of the Wellcome Historical Medical Museum

In the absence of Mr H S Wellcome, Sir W WATSON CHEYNE presided It was a pity, he said, that when Lister came to London he had not found the appreciative atmosphere of the past few days, in such an atmosphere his work would have gone much further It was, perhaps, surprising that during the centenary celebrations no allusion had been made to Lady Lister, for it was difficult for those closely associated with Lord Lister and his wife to think of one without the other She was his only secretary, and they discussed his views on an almost equal footing For hours, day and night, she would sit *waiting to take down anything that occurred to him* and noting his observations

At the time when Lister began to work, continued Sir W Watson Cheyne, practically no one else was doing anything except a repetition of Pasteur's experiments, and Lister also repeated these experiments He found that insufficient attention was paid to sterilisation of the vessels in which experiments *were performed, and he himself constructed the hot box* for sterilising the flasks, which was superior to any method hitherto in use After demonstrating the results obtained by Lister in his bacteriological experiments, Sir W Watson Cheyne concluded by saying that this official Centenary Exhibition served to emphasise one of the vital purposes of the Wellcome Historical Medical Museum—namely, to demonstrate *and visualise to research workers, students,* and others the achievements and methods of workers in medicine, surgery, and the allied sciences It was remarkable in its interest and in its completeness Mr Wellcome regarded the Museum as in its infancy, and destined it to be an institution of a vigorously progressive nature permanently located in London, for London was the medical centre of the English-speaking world and also the appropriate location of Sir William Osler's projected post-graduate institution and fellowship of medicine

Prof ARCHIBALD YOUNG *described his share in the* centenary as partly due to his occupancy of the Regius Chair of Surgery in the University of Glasgow, which from 1860–1869 was occupied by Lord Lister, and partly to the regrettable absence of Sir Hector Clare Cameron, who felt himself unable to face the journey to London and had asked him to come instead

Beaconsfield had somewhere said, continued Prof Young, that "one of the greatest legacies of any nation is the memory of a great name, and the inheritance of a great example" This was equally true of a seat of learning The University of Glasgow had a long and glorious record, the traditions of well-nigh 100 years clustered around the names of men who had done much to advance its efficiency and repute In the long and distinguished roll, however, no name outshone that of Lister, whose tradition rendered illustrious for all time its Regius Chair of Surgery The story of the birth of the antiseptic system had been often told, and would be told through the ages It was true that others before Lister had had some inklings of the truth Semmelweis, in 1847, had traced puerperal fever to infection, Lemaire, in 1863, in a treatise on carbolic acid, had advocated its use for the destruction of germs in wounds, whilst Bottini, in 1866, had urged *that carbolic acid should* be employed in the treatment of suppuration But *it was none the less true that it was Lister that finally* solved the riddle of wound infection and its prevention, it was Lister who was able to work out fully the whole problem There was no need to tell the story again Was it not told in the best of all ways in this great historical exhibition? Illustration was always worth much more than speech in elucidating a problem or in impressing a truth, and here was a *wealth of illustration Changing the simile, it might* be said that the promoters of this Museum had constructed in miniature a picture of the great life-work of the Master, a picture in which, with judicious selection yet with sufficient generosity of emphasis were portrayed the successive steps by which was built up the mature doctrine of antiseptic surgery it was to-day

Prof Young then went on to speak of the revolution in surgery at Glasgow which Lister's work had brought about The idea that, by improved ventilation and such means, it was possible to banish the dire hospital diseases which were now known to be due to infection by pyogenic germs had not been easily eradicated When Lister left Glasgow for Edinburgh he published a paper dealing with the Effects of the Antiseptic System of *Treatment upon* the Salubrity of a Surgical Hospital,[1] in which he declared that the antiseptic treatment had transformed *the wards under his care in the* Glasgow Royal Infirmary from among the most unhealthy in the country into "*models of healthiness*" Voicing the opinions of the managers of the infirmary, the irate Secretary wrote [2] to point out that the improved healthiness of the wards was to be *ascribed mainly* to "better ventilation, improved dietary, and the excellent nursing to which the Directors have given so much attention of late years"

In the earlier years, after Lister began to promulgate *his new theories in practice,* he had met with apathy and even hostility in Glasgow, as well as in Edinburgh and London, for the promulgator of any new doctrine was generally received coldly—and was liable to be misjudged, maligned, opposed and even at times painfully misrepresented This traditional fate Lister did not escape

But though he might be grieved by the opposition he encountered, he had not been dismayed Always he was his own most severe critic, and a piece of reasoning, if it had passed the bar of his own scrupulous *and searching criticism, was hardly open any longer* to effective attack Moreover, though he encountered in Glasgow, Edinburgh and London the chilling effects of apathy and indifference, yet in the two *former* places at least he was supported with uniform enthusiasm by large classes of students and was served always by loyal dressers and assistants, who, like Sir Hector Cameron, believed in him and in his message with their whole hearts and promoted its *practice to the utmost On appointment to the* Regius Chair of Surgery at Glasgow in 1860 Lister found himself without any direct hospital connexion To secure clinical material for his teaching he had to await a vacancy on the staff, and even then to take his *chance of election in competition with other applicants* At the first attempt he was unsuccessful Then a thing happened which the students of surgery in *Glasgow to-day were glad to recall In Lister's* first session after appointment he lectured to a class of 182 students and at the close of the session the class took the altogether unusual course of presenting him with an address, expressing their appreciation of his teaching and expressing their hope that "for the sake both of the rising profession and of the Institution itself" his application for the next vacancy on the staff of the Royal Infirmary would be successful This address was meant to be a testimonial in support of his application and was signed by 161 members of his class It was preserved amongst the exhibits, and Prof Young had been glad to find among the signatures those of an uncle of his wife, and of an uncle of his own—William Loch Stuart and John Young

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[1] THE LANCET, 1870, i 1 et seq

[2] Ibid, 1870, i, 175

Sir **StClair Thomson** remarked that "after these days of praise and adulation, fellows of the baser sort will be thinking that it is time we began to hear of some of Lister's defects" The defects of the great were the consolation of mean men The curious thing was that people did not feel mean in Lister's presence His was an outstanding example of how, by treating all his opponents with courtesy and patience, he appeared to elicit from them, however narrow-minded and bigoted, some of the same patience, toleration and hunger for truth Only by cudgelling his brains was he able to think of Lister's defects, and he could only remember two or three very trivial ones He had no sense of time, he was apt to be late for appointments, and he was still working at and polishing up his address when the carriage was at the door waiting to take him to the lecture hall Another defect was that "he joked with deefeeculty" He was also what would be called in these days of the æsthetes, "very utter and and intense" He had no absorbing hobbies, like golf or bridge, although it was known that he skated, fished, was devoted to walking and excursions, was fond of botany and bird life, and could be as happy as a boy when on a holiday. But at an evening party no fish out of water ever looked more unhappy and miserable He was wise in that with him, "true companionship came from sharing in work" He was exceedingly hospitable without ostentation to all who worked under him, visited his clinic, or shared in any of his labours The happy circumstances that he had had a sufficient fortune had not turned him to idleness, but helped to explain why he was not a success as a consulting physician in London He would decline to name a fee, or else suggest such a modest one that he put the family practitioner in an embarrassing position

Sir StClair Thomson went on to speak of the exhibition It demonstrated that this genius could be methodical, orderly, cautious, and far-sighted even to the verge of pernicketiness All these wonderful souvenirs would be a source of inspiration for future workers in science and surgery The man who looked forward was apt to see only one road to advance The man who also looked backward could see two or more possible avenues for advance The generosity and wide view and the unselfishness of Mr Wellcome had opened up both roads Sir StClair Thomson wished that he were there so that heartfelt thanks might be tendered for his generous hospitality, and so that he might be assured of their deep appreciation of his great work

A vote of thanks to Sir W Watson Cheyne, Sir StClair Thomson, and Prof Young was proposed by Sir **John Samuel**, Honorary Secretary, Glasgow Lister Memorial Committee, who described Lord Lister as a great gentleman and spoke of the consideration with which he had been treated by Lister when he was a young man Glasgow, in spite of the destruction of the Lister ward, was not forgetful of his work

The vote was seconded by Dr **Pasteur Vallery-Radot**, grandson of Louis Pasteur, who spoke of the interpendence of discoveries and discoverers Pasteur could not have done his work but for Jenner, and Lister could not have done his without Pasteur Between these two men there had been great personal affection

A vote of thanks to Mr Wellcome was passed with enthusiasm on the motion of Sir **StClair Thomson**

The company then proceeded to view the Exhibition itself, which contains a section of the original ward of the old Glasgow Royal Infirmary in which Lister carried out his work It has in it the furnishing and equipment used in Lister's time, and presents an epitome of the evolution of antiseptic surgery Very many of the exhibits are the actual materials and appliances with which Lister worked There is a complete collection of the various types of sprays and dressings he devised and also an exhibit of his bacteriological apparatus The insignia of Lord Lister's orders, the freedoms of cities, and the diplomas and other distinctions granted him are also on view as well as a large collection of portraits and letters

THE LISTER CENTENARY

THE TESTIMONY OF WILLIAM WILLIAMS KEEN

The ninetieth birthday of Prof William Williams Keen, of Philadelphia (he was born on Jan 19th, 1837, that is to say, while William IV was still on the throne), was recently celebrated by a service of congratulation conducted under the auspices of the First Baptist Church of Philadelphia, of which congregation the veteran surgeon had been an active member from childhood At the close of the addresses conveying the affection and esteem of the congregation Prof Keen gave a brief and modest outline of his own career tracing with convinced piety the guidance of God in shaping his aims, their successes, and even their failures Of Lister's approaching centenary he said, "In 1876 Lister was President of the Surgical Section of the International Congress of Medicine, held in Philadelphia in connection with the Centennial Exhibition He explained his antiseptic system of surgery so convincingly that I instantly accepted it. I was his first disciple in this city Each succeeding year has only strengthened my conviction of its enormous value to mankind and to animals in every department of medicine Hence, compound fracture of the leg, in competent hands is a 'safe accident' to day Any surgeon who now loses more than 3 or 4 per cent of his cases of ovariotomy must critically examine his methods if he is to maintain his standing among his fellow-surgeons Before Lister's day *Noli me tangere* was writ large on the head, the chest and the abdomen We never dared to invade these cavities in my early surgical days unless accident had already opened them To-day they are the arena of our chief victories Even the brain and the heart, the very citadels of life, surrender at our summons The labors of Lister and his followers have changed the Purgatory of my early surgical days when death peered over the shoulder of the surgeon at every operation and was sure of abundant victims, to the Paradise of to-day, when almost every death following an operation is a 'surprise,' which bids us search for any possible error in our technic"

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

Small-pox in Dundee

The detailed report on the Dundee outbreak of small-pox—up to date there have been some 77 cases[1]—will be an interesting document It will show how puzzling some recent varieties of small-pox can be, but it will also show how an outbreak can be controlled when it is properly handled Diagnosis has obviously been difficult, but careful study of the distribution of the eruption, and the results of agglutination and vaccination tests, have made it clear that, although anomalous the disease is a genuine variety of small-pox A leading feature is that the majority of the patients are children of or under school age, and that they are unvaccinated The

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[1] Questions and answers in the House of Commons relating to this epidemic of small pox will be found in our Parliamentary columns —Ed L

THE LISTER EXHIBITION.

RECEPTION AT THE WELLCOME MUSEUM

ON April 7th some 400 people attended an evening reception at the Wellcome Historical Medical Museum, Wigmore-street, London Addresses on the Lister Centenary were delivered by Sir William Watson Cheyne and others, and an excellent exhibition of Lister relics was on view The Austrian Ambassador and the Argentine Minister were amongst the guests, and the medical profession in London was fully represented Amongst the many present who personally knew Lord Lister was Mr Henry Jones, whose age is 87, and who was butler both to Lord Lister and to his father before him over a period of 50 years The guests were received by Sir W Watson Cheyne, supported by Sir StClair Thomson and Prof Archibald Young, and assisted by Dr C M Wenyon, Director in Chief of the Wellcome Bureau of Scientific Research, Dr S H Daukes, Director of the Museum of the Bureau, and Mr L W G Malcolm, Conservator of the Wellcome Historical Medical Museum

In the absence of Mr H S Wellcome, Sir W WATSON CHEYNE presided It was a pity, he said, that when Lister came to London he had not found the appreciative atmosphere of the past few days; in such an atmosphere his work would have gone much further It was, perhaps, surprising that during the centenary celebrations no allusion had been made to Lady Lister, for it was difficult for those closely associated with Lord Lister and his wife to think of one without the other She was his only secretary, and they discussed his views on an almost equal footing For hours, day and night, she would sit waiting to take down anything that occurred to him and noting his observations

At the time when Lister began to work, continued Sir W Watson Cheyne, practically no one else was doing anything except a repetition of Pasteur's experiments, and Lister also repeated these experiments He found that insufficient attention was paid to sterilisation of the vessels in which experiments were performed, and he himself constructed the hot box for sterilising the flasks, which was superior to any method hitherto in use After demonstrating the results obtained by Lister in his bacteriological experiments, Sir W Watson Cheyne concluded by saying that this official Centenary Exhibition served to emphasise one of the vital purposes of the Wellcome Historical Medical Museum—namely, to demonstrate and visualise to research workers, students, and others the achievements and methods of workers in medicine, surgery, and the allied sciences It was remarkable in its interest and in its completeness Mr Wellcome regarded the Museum as in its infancy, and destined it to be an institution of a vigorously progressive nature, permanently located in London, for London was the medical centre of the English-speaking world and also the appropriate location of Sir William Osler's projected post-graduate institution and fellowship of medicine

Prof ARCHIBALD YOUNG described his share in the centenary as partly due to his occupancy of the Regius Chair of Surgery in the University of Glasgow, which from 1860–1869 was occupied by Lord Lister, and partly to the regrettable absence of Sir Hector Clare Cameron, who felt himself unable to face the journey to London and had asked him to come instead

Beaconsfield had somewhere said, continued Prof Young, that "one of the greatest legacies of any nation is the memory of a great name, and the inheritance of a great example" This was equally true of a seat of learning The University of Glasgow had a long and glorious record, the traditions of well-nigh 400 years clustered around the names of men who had done much to advance its efficiency and repute In the long and distinguished roll, however, no name outshone that of Lister, whose tradition rendered illustrious for all timo its Regius Chair of Surgery The story of the birth of the antiseptic system had been often told, and would be told through the ages It was true that others before Lister had had some inklings of the truth Semmelweis, in 1847, had traced puerperal fever to infection, Lemaire, in 1863, in a treatise on carbolic acid, had advocated its use for the destruction of germs in wounds, whilst Bottini, in 1866, had urged that carbolic acid should be employed in the treatment of suppuration But it was none the less true that it was Lister that finally solved the riddle of wound infection and its prevention, it was Lister who was able to work out fully the whole problem There was no need to tell the story again Was it not told in the best of all ways in this great historical exhibition? Illustration was always worth much more than speech in elucidating a problem or in impressing a truth, and here was a wealth of illustration Changing the simile, it might be said that the promoters of this Museum had constructed in miniature a picture of the great life-work of the Master, a picture in which, with judicious selection yet with sufficient generosity of emphasis, were portrayed the successive steps by which was built up the mature doctrine of antiseptic surgery it was to-day

Prof Young then went on to speak of the revolution in surgery at Glasgow which Lister's work had brought about The idea that, by improved ventilation and such means, it was possible to banish the dire hospital diseases which were now known to be due to infection by pyogenic germs had not been easily eradicated When Lister left Glasgow for Edinburgh he published a paper dealing with the Effects of the Antiseptic System of Treatment upon the Salubrity of a Surgical Hospital,[1] in which he declared that the antiseptic treatment had transformed the wards under his care in the Glasgow Royal Infirmary from among the most unhealthy in the country into "models of healthiness" Voicing the opinions of the managers of the infirmary, the irate Secretary wrote[2] to point out that the improved healthiness of the wards was to be ascribed mainly to "better ventilation, improved dietary, and the excellent nursing to which the Directors have given so much attention of late years"

In the earlier years, after Lister began to promulgate his new theories in practice, he had met with apathy and even hostility in Glasgow, as well as in Edinburgh and London for the promulgator of any new doctrine was generally received coldly—and was liable to be misjudged, maligned, opposed and even at times painfully misrepresented This traditional fate Lister did not escape

But though he might be grieved by the opposition he encountered, he had not been dismayed Always he was his own most severe critic, and a piece of reasoning, if it had passed the bar of his own scrupulous and searching criticism, was hardly open any longer to effective attack Moreover, though he encountered in Glasgow, Edinburgh, and London the chilling effects of apathy and indifference, yet in the two former places at least he was supported with uniform enthusiasm by large classes of students and was served always by loyal dressers and assistants, who, like Sir Hector Cameron, believed in him and in his message with their whole hearts and promoted its practice to the utmost On appointment to the Regius Chair of Surgery at Glasgow in 1860 Lister found himself without any direct hospital connexion. To secure clinical material for his teaching he had to await a vacancy on the staff, and even then to take his chance of election in competition with other applicants At the first attempt he was unsuccessful Then a thing happened which the students of surgery in Glasgow to-day were glad to recall In Lister's first session after appointment he lectured to a class of 182 students, and at the close of the session the qualified in 1886 and after a series of hospital appointments was elected first to the chair of therapeutics and later, in 1910, to the chair of clinical medicine of the Hotel Dieu, where his teaching was much valued both by French students and foreigners In collaboration with Brouardel he edited a treatise on medicine and therapeutics in ten volumes as well as the later issues of Littre's dictionary He also edited with great skill the journal *Paris Medical* which he had founded. Since 1905 Prof Gilbert had been a member of the Academie de Medecine, and he was a Commander of the Legion of Honour

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[1] THE LANCET, 1870, i 1 et seq

[2] Ibid, 1870, i, 175

An Electrolytic Solution for Sterilising Wounds.

It will be remembered that remarkable results were obtained during the late war by the use of Carrel-Dakin solution for the treatment of infected wounds Chevrier, of Bordeaux, suggests a method in which for Dakin's solution is substituted a fluid prepared by electrolysis of Ringer-Locke saline The passage of an electric current through this fluid at a temperature of 37° C releases two powerful antiseptics ozone and chlorine, which instantly sterilise (so to speak) the infected tissues. It is hoped that this method may be a means of producing antisepsis without violation of the rigorous laws of physiology.

Tuberculosis and Cancer.

Writing in the *Presse Medicale* recently Arnould points out that there is a tendency to exaggerate the incidence and mortality of cancer. In relation to tuberculosis they appear to have risen, largely because tubercle has been considerably reduced by modern hygienic and sanitary practice. It is very questionable he says, whether cancer has actually increased and the economic loss caused by this disease by no means approaches the loss due to tuberculosis, a statement supported by statistics from Holland Norway, England, France and other countries Scarcely one-fifth of the deaths due to cancer occur during the period of full productivity, whereas four-fifths of the mortality from tuberculosis is at ages when the victims should be at work. Tuberculosis thus costs communities twice as much as cancer.

The Botelho Cancer Reaction.

Roussy and Peyre have examined the Botelho diagnostic test of cancer in 83 cases with the following results With the serum of 52 cancer patients 42 tests were positive and 10 negative With that of 21 non-cancerous patients, 6 tests were positive and 15 negative. With 9 samples of serum obtained from patients with inflammatory and glandular affections, the positive tests numbered 5, the negative 4 The experimenters conclude that the test cannot be depended on for the certain diagnosis of cancer

In the treatment of varicose veins Dr Humbert recommends the simultaneous use of sclerosing injections (chiefly of sodium salicylate) and adhesive bandaging The technique is delicate, and much experience and judgment are required In selecting the substances and concentrations for injection special attention must be paid to the state of the local lesions and the character and peculiarities of the veins

The Third International Congress on Urology will be held at Brussels from August 3rd to 9th The questions on the agenda include the Physico-therapy of Vesical Tumours and the Treatment of Genital Tuberculosis

The Fortieth French Ophthalmological Congress will begin on May 9th. The principal subject will be the relation of the sympathetic nervous system to ocular pathology and especially to intraocular circulation. Information is obtainable from Dr R Onfray, 6 Avenue de la Motte-Picquet Paris

A congress on arthritis will be held at Vittel at Whitsuntide (June 5th and 6th). Particulars may be had from Mr Renard Soc gen des Eaux Vittel, Vosges

MEDICINE AND THE LAW.

Libel Action by an Escaped Asylum Inmate.

An escape from a lunatic asylum has sometimes led to legal proceedings, but can seldom have occasioned a claim so remarkable as that of a plaintiff in a libel action tried lately before Mr Justice Rowlatt and a special jury. The plaintiff's grievance was that a London newspaper had published an article headed 'Madman Free in London ' in which he was described as a dangerous lunatic who had escaped from an asylum: this publication he said was libellous and had prevented him from getting an honest living as a hairdresser. The newspaper's defence was that the article was true in substance and fact and that in so far as the words were matters of comment, they were published in good faith and without malice on a matter of public interest The plaintiff who appeared in person, gave a frank account of his history. He was sentenced in 1919 to five years' penal servitude for shooting at two policemen with intent to do them grievous bodily harm At the time of the offence he and another man were attempting to commit a burglary at Finchley, and he was armed with a pistol a jemmy, and a torch He served part of his sentence at Wandsworth prison part at Parkhurst, and from May, 1920, to August 1924, he was confined at the Broadmoor Criminal Lunatic Asylum On his release he was sent to Napsbury Lunatic Asylum for about 16 months; then his relatives had him removed he said, to Peckham House From the latter institution he escaped on Feb 17th, 1926 and the article of which he complained was published on the following morning. He kept quiet for a fortnight and afterwards tried to get work at his trade as a hairdresser. In one case a hairdresser refused to employ him because he answered the description published in the newspaper. Some of these facts were stated in his evidence in chief others were admitted in the course of cross-examination during which he agreed that while at Broadmoor, he might have been described as "destructive cunning and threatening," though he added that not all the inmates at Broadmoor were insane According to the account of the case in the *Times* among the witnesses whom he called were the secretary of Peckham House (who said he knew nothing against him as a patient) Dr. Hector Munro (who examined him in March, 1926 and certified that he then seemed quite able to look after himself and his affairs and that the examination revealed no trace of mental derangement) and three hairdressers who had employed him since his escape and said they found him sane and peaceable The learned judge told the jury that the plaintiff had evidently been a very dangerous man who had been sentenced for a serious crime and had escaped from an asylum: it was for the jury to say whether the defendant newspaper had done more than it was justified in doing. The jury returned a verdict for the defendants It is something of a relief to record a case of this kind where there was no charge of negligence against a certifying doctor and no conflict of medical evidence.

"Holding-out" by Unregistered Dentist

The stipendiary magistrate at West Ham Police-court imposed last week a fine of £40 upon a prosecution by the Dental Board The summons under Section 1 of the Dentists Act of 1921, alleged that the defendant held himself out as practising or being prepared to practise dentistry in contravention of the Act. Evidence was given that his name was struck off the Dentists' Register on June 1st 1926, the principal ground being an allegation of advertising. Two witnesses testified that on the defendant's window were the words 'Mr. Wm Birkett Dentist.' and that on doors leading into the premises was lettering showing Birkett Dentists Ltd and also Mr Wm Birkett, Dental Practitioner. According to the report of the case in the *Times* four witnesses called for the defence denied that the words were late Dr. John McVail used to emphasise the fact that, in badly vaccinated areas, small-pox began to appear disproportionately amongst the children under 10, as it did in the very early days of the nineteenth century When vaccination became practically universal, the disease was rarely to be met with in children under 10 years old Dundee is repeating the experience now familiar elsewhere The medical officer of health and his local authority have acted with promptitude and vigour, both in extending hospital space and in securing vaccination Some 9 000 children have been vaccinated or re-vaccinated

The Pharmacopœial Preparations of Ergot

A recent meeting of the Edinburgh Obstetrical Society began with a paper by Prof A J Clark on the question whether the pharmacopœial preparations of ergot contain active principles The history of ergot epidemics, he said, showed that ergot taken by mouth produced toxic effects, and the frequency of abortion during epidemics of ergotism had probably led to its use in therapeutics Its outstanding effect in treatment was that, when given by the mouth during labour, it caused increased force and frequency of pains within 20 minutes, the increased action being so powerful as to be dangerous if there was any mechanical obstruction This was an unusually straightforward and easily recognisable therapeutic action, and though the active principles of ergot were unstable, it was remarkable that there should be any doubt whether any given preparation was active or inactive

The chemistry of ergot, he said, had long been a puzzle In 1874, Tanret had isolated the crystalline alkaloid ergotamine This proved to be inert, but in 1906, Barger and Carr had isolated the alkaloid ergotoxin which produced all the typical pharmacological actions of ergot and was found to be the hydrate of ergotinine In 1922 Stoll had isolated another specific alkaloid, ergotamine The pharmacological actions of ergotoxin and ergotamine appeared to be identical In addition to the specific alkaloids, ergot contained a remarkable medley of breakdown products of proteins Of these, tyramine and histamine, the amines derived from the amino-acids tyrosine and histidine, had received most attention These drugs produced remarkable and interesting pharmacological actions when given hypodermically, but had very little action when given by mouth The quantity of them present in ergot was too small to be of any importance when ergot was given orally The therapeutic action of ergot therefore depended entirely on the specific alkaloids, of which it contained 0 1 to 0 2 per cent In 1907, Barger and Dale had pointed out that, since ergotoxin was insoluble in water, the liquid extract of ergot could contain little or none of this active principle In 1913, Carr and Dale had criticised the pharmacopœial preparations in detail, showing that they were all produced in such a way as to lose nearly all the active principles These criticisms were not affected by the discovery of the new alkaloid ergotamine, for this had similar solubilities to those of ergotoxin In 1923, Prof Clark had himself performed a series of tests on pharmacopœial preparations made from ergot of known activity, and had found that the processes of preparation involved the loss of 97 per cent of the active principle, except in the case of the ammoniated tincture in which one quarter of the active principle was retained Most of the foreign pharmacopœias, said Prof Clark, contained rational methods for making ergot preparations Curiously enough each revision of the British Pharmacopœia since 1885 had made the British preparations as a whole worse than they were previously As a new pharmacopœia was likely to be prepared soon, the question was one of obvious practical importance He found it difficult to understand why obstetricians had accepted, and apparently had used without much complaint for 30 years, preparations of ergot which were found to be inert when judged by pharmacological and chemical tests

PARIS

(FROM OUR OWN CORRESPONDENTS)

The Box System for Babies

THE lives of thousands of French children were saved during the war by the establishment of *chambres d'allaitement* at institutions employing women The best results were obtained at those which were visited every week by a pædiatrist, and an interesting account of the one which serves the personnel of the Salpêtrière Hospital has recently been given by Prof Armand Delille Here the arrangements permit of the isolation of each baby in a kind of box, where it is breast-fed by the mother every three hours During the past four years there has not been a single death from digestive troubles among 200 infants accommodated, and in spite of occasional cases of measles, whooping cough, and diphtheria brought in from outside, there has been no epidemic of these diseases The box system, if in general use at creches, would reduce infantile mortality to a minimum At such institutions it is also possible to adopt prophylactic measures against rickets which is found in about 7 per cent of children throughout France At the Salpêtrière *chambre d'allaitement* the babies are given sun-baths as a routine during fine weather From April to October, whenever there is enough sunlight, they are exposed naked to the rays, their cradles being taken out on a terrace facing south-east Not one of the 194 children thus treated has developed rickets Some of them born in November or December and appearing weakly, had ultra-violet baths during the winter, but those born after the end of January had nothing but ordinary sunshine This is a useful demonstration of the ease with which a serious disease may be prevented by simple measures

Treatment of Asthma

As a treatment for asthma Dr Paul Cantonnet of Paris recommends daily intramuscular injection of 1 to 3 c cm of a fresh 5 per cent solution of iodised polypeptone, made up in hypertonic (1 5 per cent) saline An accessory form of treatment is nasal insufflation of stimulating and astringent powders and intratracheal injections having the same effect on the lower respiratory passages Dr Cantonnet claims that in only 28 cases out of 3200 has there been complete failure Of the remainder, 50 to 75 per cent were cured in 20 to 25 days, and the rest after from one to four relapses As a rule the attacks disappeared during the first ten days, generally in the first five

Benzyl Cinnamic Ether and Pulmonary Tuberculosis

The use of benzyl cinnamic ether in the treatment of tuberculous epididymo-orchitis has already been described in THE LANCET (1926, ii, 824) Dr Jacobson of Paris who devised the method, has reported to the Société Médicale des Hôpitaux on its results in 10 cases of pulmonary tubercle, none of which was suitable for artificial pneumothorax Over a period of 12 days 0 25 c cm of the drug was given to each patient after which there was an interval of 18 days before treatment recommenced It is given as an intramuscular injection in an oily suspension and is well tolerated Of the ten patients, two died some months after administration ceased, in one there was improvement of the general condition without apparent change in the pulmonary lesion whilst in the remaining seven there was distinct amelioration of the general condition and of the physical signs, together with a significant alteration in the radiographic appearances Under the influence of the drug the focus of infection in the lung seemed to undergo sclerosis

Death of Prof Gilbert

Prof Augustin Gilbert, who has died after a short illness, was born in 1858 at Buzancy (Ardennes) and went to school at Rheims At the age of 18 he came to Paris and took up the study of medicine He

PHLEBITIS AND THROMBOPHLEBITIS

To the Editor of THE LANCET

SIR,—Dr. W. Bain's article has once again drawn attention to the prevalence of venous thrombosis following intoxications and infections, and my excuse for entering upon a discussion on the subject is because my research work throws light both upon the cause and the treatment In all intoxications and infections some of the protein particles in the plasma increase in size, or undergo what I term "hydration," to avoid being sent into true solution Once the cause of the dehydration and the consequent hydration has been removed the hydrated particles undergo the cyclical change of dispersion Should the division and subdivision of the protein particles result in an enormous number being formed, the dispersed phase takes the place of the dispersion medium (the liquid portion of the plasma) and vice versa to form a gel The gelation of the protein particles occurs where the circulation is most sluggish—viz, in the veins—to cause what is known as "thrombosis" Although gelation occurs frequently in the veins of the lower extremities, it is particularly apt to occur in the lungs Pulmonary gelation when very marked occurs in the pulmonary artery which functions as a vein, to cause what is erroneously known as "pulmonary embolism" When the gelation is less marked pulmonary œdema is produced a condition which is usually wrongly named "pneumonia" Pulmonary embolus is wrongly named because the thrombus is formed *in situ* Venous thrombosis may occur in more than one vein at a time and the lesion may spread by direct extension, but rarely, if ever, does a portion of the thrombus become dislodged to settle elsewhere Therefore, the long-continued rest generally advised is not necessary, indeed it is actually harmful Another point in this connexion is the fact that early movement, once the intoxicant or infective agent has ceased its activity, would prevent gelation from occurring Pulmonary thrombosis should not be called pneumonia because it is due to a chemico-physical change the protein particles in the plasma undergo and is independent of micro-organisms This rules out of court the idea that the type of venous thrombosis referred to is a septic process

Protein gelation gives a typical blood-picture. The serum is very clear, the suspension stability of the red blood corpuscles is reduced the refractive index of the serum is lowered, the viscosity of the blood is raised, the coagulation time is shortened, the blood is particularly dark, the percentage of one or more of the adsorbed protein constituents is raised (sugar, urea, calcium, &c), and the serum viewed with a dark-ground condenser shows very few particles moving and a carpet of precipitated particles, with or without an extensive fibrin network

Protein gelation differs from intravascular clotting produced by conductors, of which para-thor-mone is a good example, in many respects Intravascular clotting takes place in the arteries, the blood is bright red, the suspension stability of the red blood corpuscles is not reduced, the refractive index of the serum is not lowered, and the serum examined with a dark-ground condenser reveals myriads of particles with active Brownian movements Protein gelation is characterised by the great loss of electricity sustained by the protein particles, hence the reason why the particles coalesce to form a thrombus Therefore the rational treatment is to supply electrons to the particles and the moment their negative charge is increased the agglutinations break up and the particles are restored once more to the circulation When fever is present I prescribe Sup 36 in 0 01 g doses and when there is no fever Sum 468 in 0 002 g doses Sup 36 should be injected intramuscularly on two successive days and again on the fifth day Sum 468 should be injected intramuscularly every day or every other day until the thrombus has vanished I have treated many cases in this way with uniform success and have had all the patients walking about in less than a fortnight.

The phenomenon of clotting is fully described in "The Nature of Disease," (Vol I. Chapter XIV), so I need say no more here than that clotting is not a ferment action, that there are no such substances as prothrombin and thrombin, that clotting can occur independently of blood-platelets, and that calcium has no specific rôle —I am, Sir, yours faithfully,

J E R MCDONAGH

Wimpole street, W 1, April 2nd, 1927

ANTERIOR SUBLUXATION OF THE ATLAS

To the Editor of THE LANCET.

SIR,—While congratulating Prof Oppel on the brilliance of his technique which enabled him to remove successfully part of the anterior arch of the atlas, may we at the same time draw attention to what appears to be a misconception of the mechanism of the occipito-atlanto-axial articulation In discussing the plan of the operation (THE LANCET, April 2nd, p 700), he says —

> the crux of the intended operation would consist in taking measures to avert the possibility of an ensuing compression of the medulla It thus becomes evident that to gain that purpose the anterior arch of the atlas should be removed This measure alone would permit the detached dens to move forward with the subsequent slipping forward of the atlas

Surely, in the event of the transverse ligament giving way, absence of the anterior arch of the atlas would not prevent compression of the medulla between the posterior arch and the odontoid process Would not such a calamity be more effectively and more easily avoided by a laminectomy of the atlas? It appears to us that, judging from the result, the operation was desirable from the point of view of improving the function of these joints, but we fail to understand how the absence of the anterior arch could avert the possibility of medullary compression, and would suggest that this depended entirely upon the fact that the transverse part of the cruciform ligament remained intact

We are, Sir, yours faithfully,

S ALWYN SMITH, F.R C S.
LAMBERT ROGERS, F.R C S

Surgical Unit, Welsh National School of Medicine,
the Royal Infirmary, Cardiff, April 5th, 1927

VENEREAL DISEASE IN THE MEDICAL CURRICULUM.

To the Editor of THE LANCET

SIR,—In the report of my remarks at the recent meeting of the Medical Society for the Study of Venereal Diseases (THE LANCET. April 2nd, p 707) my main contention was omitted This was that the student should attend the surgical out-patient department from even the very beginning of his studentship, if only for an hour a day Under an inspiring and judicious instructor (mine was the well-known Joseph Bell) much lasting clinical knowledge can be acquired long before the full details of anatomy, physiology, and pathology are mastered This is particularly true with regard to the external manifestations of such a disease as syphilis Even though the thorough treatment may be best taught in a special department, its external aspects should be studied in the surgical out-patient department where they can be compared with the various other conditions from which they have to be distinguished An early acquaintance with the features and possibilities of this disease is important for all who may as dressers (or nurses) have to handle lesions which are possibly "specific"

I am, Sir, yours faithfully,

London, April 10th, 1927 JAMES DUNDAS GRANT exhibited as alleged by the prosecution The *defendant himself stated that, since his name had been* erased from the Register he had not used the description of dentist, he said he had put up " Late Dentist " and also " Dental Prosthetician " Asked the meaning of the latter phrase by the magistrate, he said the word meant a dental mechanic and was a common word in the trade Mr Abinger, who appeared for the defendant, said Mr Birkett was the director of a company carrying on business, and that all its dental work was done by registered and qualified men It was suggested that the prosecution was inspired by malice and spite on the part of a rival The magistrate, however imposed a fine as stated, and said he was convinced that the word " practitioner " had been altered to represent a mechanic There had been another summons against Mr Birkett for actually practising dentistry in contravention of the statute but the prosecution withdrew this summons at the outset of the proceedings, and the magistrate allowed the defendant £10 10*s* costs in this respect

The decision in these " holding-out " cases depends upon the facts and the magistrate's view of them The evidence here was conflicting It is conceivable that the words which the defendant stated he had himself used might be proper and harmless in certain circumstances, and that they would raise an inference of " holding-out " in other circumstances Presumably the evidence of the witnesses for the prosecution was accepted

" *Heather Honey* "

Upon a summons recently taken out by the Ministry of Agriculture, the West London Police-court magistrate has held that the label " Heather Honey " is not a mere generic trade description, but that it implies that what is offered for sale does contain heather pollen A company which was responsible for the selling of a jar of honey labelled " Heather Honey," which on analysis was found to contain no trace of heather pollen, was fined £20 The defendants argued that the label was merely descriptive of the type, heavier honey being classified in the category of heather honey, and the higher and finer honey being put in the category of clover honey They argued that the label was not a guarantee that the bees had visited heather, and they pointed out that obviously there could not be any great stock of actual heather-flavoured honey on the market The magistrate said the prosecution had proved its case He was satisfied that there was such a thing as heather honey—i e , honey substantially made from the heather bloom The label implied that the honey did contain heather pollen The decision is of importance to retailers

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WESTMINSTER OPHTHALMIC HOSPITAL —On April 6th a reception was held at the Westminster City Hall in the interest of the rebuilding fund of Westminster Hospital The Mayor of Westminster, Councillor S P B Bucknill, who received the guests, opened the proceedings with an address in which he explained that the hospital was founded over a century ago by an army surgeon, Mr G J Guthrie, at his own house on the site of the present Berkeley Hotel The hospital was subsequently removed to Marylebone-street and afterwards to Warwick-street, Golden-square and in 1832 the present hospital in King William-street, Strand, was erected Lord Desart, chairman of the rebuilding fund said that the work of the hospital had so increased that it was necessary to seek larger premises The freehold of the site and buildings in King William-street had been realised and a new hospital would be built in Broad-street Shaftesbury avenue, where it would be possible to train more students and more nurses and where the poor would be treated along with the more well-to do and especially the children of all classes, the preservation of whose eyesight was a matter of deep national concern In order that the new hospital might start free of debt a sum of £60,000 was required immediately Mr Bernhard Baron had given £10,000 and other sums had been received from generous donors The architect Mr Percy Adams, F R I B A then presented the plans of the new hospital, after which Mr W H McMullen explained how modern eye surgery was carried out at the hospital Sir Richard Cruise subsequently demonstrated some of the scientific apparatus used there

Correspondence.

" Audi alteram partem "

TESTS FOR DRUNKENNESS

To the Editor of THE LANCET

SIR,—I am happy to be able to assure Dr Southgate that some of the senior police medical officers are far from being satisfied with the present tests for drunkenness and that the great scientific value and possible practical importance of his work and that of Dr Carter is recognised by them He will be glad to hear that active investigations are at present being made with a view to a corroboration of their observations —I am, Sir, yours faithfully,

London, W , April 8th, 1927 MAURICE A CASSIDY.

SPLENECTOMY IN MALARIAL SUBJECTS

To the Editor of THE LANCET

SIR,—With reference to Dr J. MacQueen's interesting account of his successful treatment of an enlarged and ruptured malarial spleen, published in your issue of Feb 26th, in which he invites the experience of others, the following brief summary of the last ten splenectomies performed at the Altounyan Hospital may be of interest

1 Male, aged 25, malarial splenomegaly 1/5/24 Splenectomy Diaphragmatic adhesions 2/5/24 Profound shock. Blood transfusion Death

2 Female, aged 10 Malarial splenomegaly 23/6 24 Blood transfusion 1/7/24 Splenectomy Slight shock Blood transfusion 13/7/24 Discharged convalescent

3 Female, aged 40, malarial splenomegaly 3/7/24 Splenectomy Spleen weighed 9 lb No shock Blood transfusion Discharged convalescent ten days later

4 Male, aged 18, malarial splenomegaly 20/11'24 Splenectomy Blood transfusion No shock Discharged convalescent 15 days later

5 Male aged 20 Splenic anæmia 24/1/25 Splenectomy Blood transfusion No shock 6/2/25 Death from exhaustion

6 Female, aged 30, malarial splenomegaly 28/3/25 Splenectomy Blood transfusion No shock 27/4/25 Discharged convalescent

7 Male, aged 30, malarial splenomegaly 2/6/25 Splenectomy Blood transfusion No shock 4/6/25 Death Cause unknown

8 Female, aged 15, malarial splenomegaly 13/5/26 Splenectomy Blood transfusion Slight shock 26/5/26 Discharged convalescent

9 Female, aged 35, splenomegaly Ascites Cirrhosis of liver 6/11/26 Splenectomy Many adhesions which caused profuse hæmorrhage Blood transfusion on the table Death one hour later

10 Female, aged 20, torsion of the spleen simulating an ovarian cyst 22/12/26 Splenectomy Malarial spleen weighed 4 lb Blood transfusion No shock 3/1/27 Discharged convalescent

I should say that, provided there are no extensive diaphragmatic adhesions, the removal of the malarial spleen need not carry a higher mortality than excision in other diseases Here we are frequently forced to abandon all attempts at splenectomy owing to formidable adhesions Case 9 shows the danger even of exploring such cases Bleeding from adhesions was started by the exploring fingers and could not be arrested until the spleen had been removed , the pedicle was too short to clamp before delivery of the spleen As to the late effects we have as yet no evidence that the procedure is of lasting benefit to the malarial patient

With regard to the rupture of the diaphragm reported by Dr MacQueen, I suggest that it is difficult to diagnose this condition without actually seeing the lesion I have been more than once misled by the innocent sucking in of air into the subdiaphragmatic pouch

I am, Sir, yours faithfully,
E H R ALTOUNYAN M D Camb
The Altounyan Hospital, Aleppo, Syria

Obituary.

JOHN ERNEST HODDER-WILLIAMS, C.V.O.,

CHAIRMAN OF THE LANCET

WE deeply regret to announce the death, which occurred on Friday last, April 8th, of Sir Ernest Hodder-Williams, head of the publishing firm of Hodder and Stoughton, and for rather more than six years Chairman of Messrs. Wakley and Sons, the proprietors of THE LANCET.

John Ernest Hodder-Williams was the eldest son of John Williams of Bromley by Mary Hodder, who was the daughter of Matthew Hodder, the famous publisher who, in association with Thomas Wilberforce Stoughton, developed the activities of the House later known by their joint names.

ERNEST HODDER-WILLIAMS.

Ernest Williams was educated at the City of London School and University College, London, and further pursued his studies in Paris and Berlin. He entered the firm of Hodder and Stoughton when little more than a boy, and consequently worked for more than fifteen years under his grandfather, who did not die until 1911, after 60 unbroken years as a publisher. On Matthew Hodder's death, T. W. Stoughton, who had been connected with the firm for over 40 years, with the late Sir William Robertson Nicoll, as literary adviser, became the senior partner; and upon his death in 1917 Ernest Hodder-Williams—the family having added the grandfather's name to their own—became the head of the firm. The progress of the firm during the association with it of Ernest Hodder-Williams and his brothers has been remarkable. Expansion in all directions of publishing activity was associated also with the success of the well-known newspapers the *British Weekly* and the *Bookman*, both of which are the property of the firm. The early bent of the House towards religious publication was never lost, but aided by far-reaching views, and with assiduous conduct of affairs, the list of publications rapidly became of an extraordinarily comprehensive nature, and now their imprint will be found upon standard works under every heading in any catalogue.

In 1920 the controlling powers of the Company owning THE LANCET were purchased by Messrs. Hodder and Stoughton and Sir Ernest Hodder-Williams became Chairman of the Board, and we may quote, as descriptive of his relations with THE LANCET, his own words spoken at the centenary dinner of the paper. "I am very proud," he said, "to stand to-night in this place of a great tradition. Perhaps, under the circumstances, you will allow one personal reminiscence. In the days of my early manhood—and my father, whom I am delighted to see here this evening, will bear me out when I say that at that time one reached early manhood very early—I had the ambition to enter the medical profession, but the Fates, no doubt in kindness to my future patients, decided entirely otherwise. They did not, however, altogether forget, and after many years they presented to me a grand old surgical instrument—THE LANCET—fashioned out of a material with which I had become somewhat acquainted. And when I use the personal pronoun may I say at once that I refer not only to myself but to all my splendid associates. As proprietors of THE LANCET, my brothers and I made a vow—we have tried to keep it—that we would, as far as in us lay, do nothing which might leave the slightest stain of dishonour on a most highly honoured name. In these latter years laymen, business men and business women have worked increasingly side by side with professional men and professional women in many fields of service of peace and of war; in none, I think, with greater honour to themselves and to their cause than in the field of healing. It is because of this that we business men who control the destiny of THE LANCET feel deeply our responsibilities, our privilege and our opportunity. If we can be of any service in scattering far and wide the fine grain garnered from medical knowledge and experience we shall have share in the joy of the reaping."

In addition to his publishing work and his interest in this paper, Sir Ernest Hodder-Williams was intimately and importantly connected with the affairs of the City of London. He was for a long period a member of the Corporation, and during the past eight years had been Chairman of the County Purposes Committee. Further he had a deep and hereditary concern in the prosperity of the Young Men's Christian Association. His father was a nephew and intimate friend of Sir George Williams, the founder of the Y.M.C.A., whose right-hand companion in the first developments of the movement had been the veteran Matthew Hodder. In 1906 he wrote the life of Sir George Williams, in which the initiation, early struggles

"THE LONDON CLINIC"

To the Editor of The Lancet

Sir,—In view of certain publicity which has recently been given to the London Clinic (founded and maintained by the British Humane Association), we, the undersigned, wish it to be known that we have severed our connexion with that body

We are, Sir, yours faithfully,

Dawson of Penn } Advisory Committee
Thomas Horder }
L D Bailey,
J F Carter Braine,
E P Cumberbatch,
S L Higgs,
D V Hubble (R M O),
Reginald C Jewesbury,
G Murray Levick (Hon Medical Director),
Stanley Melville,
C A. Robinson

April 8th, 1927

INFLUENZA A PERSONAL STORY

To the Editor of The Lancet.

Sir,—During a recent attack of pure influenza I reflected upon the field of action of the germs, or of their conflict with phagocytes The influenza was "pure" inasmuch as none of the germs which are usually loafing about the throat took part in the frolic After breakfast I had done my chores in the garden (my gardener is free on Sunday), and returned to the house without an inkling of impending trouble There was absolutely no symptoms, yet unwonted disinclination to starting for church aroused suspicion Temperature 100 6° F Later in the day the raised temperature caused the epithelium of the throat the secrete clean white mucus, which provoked a cough For three days I put nothing into my stomach but water and carbonate of soda, this in my personal experience being the only means of avoiding the misery of flatulent distension which results from taking food when the digestive secretions are in abeyance, and a high temperature favours fermentation It was clear that the skin, muscles, and interstitial lymphatic tissue were not affected During this period and the succeeding two days the clear urine was the colour of dark brown sherry Destruction of blood pigment was going on The liver was certainly within the field of operations No food and a motion every day had emptied the lower bowel before, on the fifth morning, I passed a very large quantity of black inspissated bile, which had collected in the sacculi of the colon The hæmolytic capacity of the germ may possibly afford a clue to its identity. Until I discovered that I was feverish I was head to head with members of my family; but they escaped This seems to show that in the earliest stage of influenza germs do not escape into the breath

I am, Sir, yours faithfully,

April 7th, 1927 Alex Hill.

GLYCOSURIA COMPLICATED BY GALL-STONES

To the Editor of The Lancet

Sir,—In connexion with the case described by Dr Shapland in your last issue, may I point out that, in my experience, an abnormally low threshold for glucose is not uncommon in diabetes The systematic chemical analysis of the whole blood made in all my cases has shown that, as a rule, this lowering of the threshold is associated with a subnormal percentage of calcium upon which it appears to depend, for the threshold rises if the percentage of calcium increases Partial exhaustion of the parathyroids as a result of chronic toxæmia appears to be the most common cause, but, since disturbances of calcium metabolism occur in connexion with inflammatory affections of the pancreas, as I believe I was the first to point out in 1904, it may also arise as a consequence of chronic pancreatitis The latter may be the explanation of the low threshold in Dr Shapland's case

It has long been recognised that glycosuria is a relatively uncommon result of the chronic interstitial pancreatitis associated with gall-stones and that when it occurs it is of a mild type But the disease is usually progressive and, although operative interference may bring about an improvement in the patient's carbohydrate tolerance, it is often only temporary and frank diabetes ultimately develops I have several patients in whom this series of events, spread over as long as ten years in one instance, has taken place and they are now being kept alive only by the use of considerable doses of insulin While, therefore, I agree with Dr Shapland that removal of the diseased gall-bladder in his case was probably the deciding factor in the alleviation of the diabetic condition, I should be doubtful whether the recovery will be permanent

I am, Sir, yours faithfully,

P J Cammidge.

Nottingham-place, W, April 9th, 1927

THE GLUT IN WOMEN DOCTORS

To the Editor of The Lancet

Sir,—The glut in women doctors still continues A single advertisement inserted in a London weekly medical journal produced 48 applicants for two posts—viz, those of senior and junior resident medical officers to a children's hospital in the North of England, the salaries being £120 and £100. Recently a like advertisement brought forth only 12 male candidates for the post of house physician at our general hospital

None of the former applicants gave her age as over 29 Thirty-eight of the candidates had held previous hospital appointments lasting from 2 to 50 months Many had gone from post to post All the applicants were University graduates except one, who held the diploma of the London Conjoint College and she is a R.M O, in a homœopathic hospital Twenty-three had English qualifications, 21 Scottish, and 4 Irish (one from north Ireland and 3 from the Free State) The 23 English women had degress from Oxford 1, Durham 4, London 10 (University 9, Conjoint Colleges 1), Birmingham 1, Liverpool 3, and Manchester 4 The 21 Scottish graduates were 3 from St Andrews, 6 from Edinburgh, 8 from Glasgow, and 4 from Aberdeen The Irish graduates were 1 from Belfast and 3 from Dublin The large number of Scottish applicants were out of proportion to the numbers qualifying across the border Of over 2000 new names added to the Medical Register last year from Great Britain, two thirds were from England and one-third from Scotland, although Scotland has only one-seventh the population of England The Oxford graduate was appointed senior and a Durham graduate, who had local influence, junior medical officer

With regard to the excessive number of graduates (men and women) entering the profession in the face of a fallen and still falling sickness rate—the Medical Register already contains over 53,000 names—it is said that out of every three qualifying in Ireland two must emigrate, and the proportion must be higher from Scotland The celebrated Abernethy at the first meeting of his annual class of medical students used to exclaim, "Good God, gentlemen, what will become of you all?" So we may say to-day. Some of the best American Universities (Pennsylvania, Baltimore, &c.), restrict their medical students to a fixed number, which can be adequately taught the practical side of their work, some of them admitting less than a quarter of the applicants and selecting only the best after inquiry and examination

I am, Sir, yours faithfully,

Sunderland, April 7th 1927 Wm Robinson

defect—viz, rheumatic fever, 2 , chorea, 8 , chorea and rheumatic fever, 2 , chorea and subacute rheumatism, 6 , and subacute rheumatism, 9 There are 13,008 children on the rolls of the Reading elementary schools so that the 57 known " cardiacs " would be equivalent to 4 4 per 1000 of the school population, and the 84 " cardiacs " and " rheumatics " combined to 6 5 per 1000 Dr Milligan does not think they have been successful in tracing all the cases of rheumatic and allied conditions in the schools

Barnstaple

The statistics for 1926 of this rural district are as follow —

Population—18,630 ; Birth-rate 16 1 ; Death-rates per 1000 of the population All causes 10 8 , Tubercle 0 75 , Cancer 1 4 , Respiratory diseases with Influenza 1 0 , Heart disease 1 4 Death-rates per 1000 births Infants 49 5 , Mothers from childbirth 0 0

Dr John R Harper says his large district (its area is 129,768 acres) is almost entirely agricultural, except for a few parishes on the coast where there is fishing The standard of living and comfort for labourers has improved during recent years, but much remains to be done in the replacement of " picturesque but *badly lighted and ill-ventilated cottages* " The population is largely increased by visitors during the summer months, and the popularity of Croyde has rendered the sewage disposal question acute The sanitary inspectors mention that the increasing use of tinned and bottled foods makes it essential for each parish council to arrange for a recognised dumping place At present the hedges, rivers, streams and beaches near any hamlet give evidence of this need The building trade has been active and more plans were deposited in 1926 than in any of the last 25 years The 92 dwelling-houses included 23 bungalows in brick or stone, 22 wood and asbestos bungalows, and 47 brick or stone houses of two or more storeys

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INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED APRIL 2ND, 1927

Notifications—The following cases of infectious disease were notified during the week —Small-pox, 392 (last week 404) , scarlet fever, 1311 , diphtheria, 909 , enteric fever, 39 ; pneumonia 1264 , puerperal fever, 29 , puerperal pyrexia, 98 , cerebro-spinal fever, 8 , acute poliomyelitis, 8 , acute polio-encephalitis, 1 , encephalitis lethargica, 36 , dysentery, 2 , ophthalmia neonatorum, 133 No case of cholera, plague or typhus fever was notified during the week

Outside the counties in which small-pox has recently been prevalent, one case was reported from each of the counties of Kent (Gravesend) and Surrey (Wimbledon) We learn from Dr J Cates that the case of small-pox at present under treatment in Surrey is of the severe variety met with in India Infection occurred on a P & O boat The attack of the disease is moderately mild and the patient is doing well

Deaths—In the aggregate of great towns including London there was no death from small-pox, 2 (0) from enteric fever, 79 (3), from measles, 5 (1), from scarlet fever, 70 (22), from whooping-cough, 25 (5), from diphtheria, 40 (9) from diarrhœa and enteritis under two years, and 160 (25) from influenza The figures in parentheses are those for London itself

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DONATIONS AND BEQUESTS—St Peter's Hospital for Stone and other Urinary Diseases has received an anonymous gift of £5000—Mr James Talbot, Birmingham, left £500 each to Queen's Hospital, Birmingham, Birmingham General Hospital, The China Inland Mission, St Luke's Cottage Homes, the Children's Hospital, Birmingham, and four other institutions, and £250 to Muller's Orphanage—Mr Henry Barry Blagrave, Reading, Berks, left £2000 to the Royal Berks Hospital—Sir Thomas Rodgerson Marsden, Rhos on Sea, and late of Oldham bequeathed £1000 to Oldham Royal Infirmary " if not given in his lifetime "—Sir William Forest, Mayor of Blackburn, has received an anonymous gift of £1000 to the Blackburn War Memorial Infirmary Wing

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND—At a quarterly meeting of the Council held on April 7th Sir Berkeley Moynihan, the President, in the chair, the following were admitted honorary Fellows of the College Roberto Alessandri (Rome), Edward William Archibald (Montreal), Frans Ali Bruno Krogius (Helsingfors), Paul Lecène (Paris), René Leriche (Strasbourg), Rudolph Matas (New Orleans), and Charles Willems (Liège)

The following were elected Fellows of the College as members of 20 years' standing Cecil Fowler Beadles and Sir Henry John Gauvain

E Miles Atkinson, F R C S (Bath), was awarded the Jacksonian Prize for a dissertation on The Pathology, Diagnosis and Treatment of Abscess of the Brain The subject for the year 1928 is the Surgical Treatment of Pulmonary Tuberculosis Herbert Cecil Malleson, M R C S , L D S , was awarded the John Tomes Prize for 1924–26 for work in connexion with Histology and Pathology of the Dental Tissue Robert Gordon Wilbond, of Bristol, who obtained the highest number of marks in Anatomy in the recent First Professional Examination, was appointed a Begley Student for a period of three years The diploma of Fellow was conferred upon G F G Batchelor, St Andrews Univ and Guy's Hosp and *R W Jones, Liverpool Univ* *The Licence in* Dental Surgery was conferred upon S D Marcus, Guy's Hosp

UNIVERSITY OF DURHAM *College of Medicine*—A third lecture on the History of Medicine will be given at the College, Newcastle-upon-Tyne, on Wednesday, April 20th, at 4 45 P M , by Dr Charles Singer, of University College, London Medical practitioners are invited to attend

ROYAL INSTITUTION—On Friday, May 13th, at 9 P M., Sir Humphry Rolleston will give an address entitled Concerning Old Age

QUEEN'S UNIVERSITY CLUB, LONDON—The annual spring dinner of this Club will be held at the Connaught Rooms on Thursday, April 21st, at 7 30 P M. for 8 P M , Prof. J A. Lindsay, the President, in the chair Particulars may be obtained from the Hon Secretaries, Dr Purdon Martin, 9, Harley-street, W 1, and Dr Ivan Magill, 11, Wimpole-street, W.1

ROYAL INSTITUTE OF PUBLIC HEALTH—The Council of the Institute have made the Smith Award to Brevet-Colonel James Robert Kaye, county medical officer of health for the West Riding District of Yorkshire This award, which consists of a bronze figure of Hygeia by Charles L Hartwell, R A., is awarded triennially to a medical officer of health who is recognised as having done the most noteworthy work in the discharge of his official duties

ROYAL SOCIETY OF ARTS—On Monday, April 25th, at 8 P M., Mr John W T Walsh, senior assistant, National Physical Laboratory will give the first of three lectures on the Measurement of Light The other two will be delivered at the same hour on May 2nd and 9th On Wednesday, May 18th, at 8 P M , Mr Robert R Hyde will lecture on Industrial Welfare in Great Britain and the United States

ROYAL SOCIETY OF MEDICINE—A Colyer Prize was founded in June, 1926, to commemorate the 25 years' service of Sir Frank Colyer as honorary curator of the odontological museum Its value is about £20 and it will be awarded triennially for the best original work in dental science completed during the previous five years by a dental surgeon educated at any duly recognised dental school in Great Britain or Northern Ireland who has not been qualified to practise more than five years at the date of the award Applications for the first award should be submitted not later than July 1st, 1928, together with a general account of the candidate's research

THE LATE DR F W APTHORP—Dr Frederick William Apthorp, who recently died at Hove at the age of 78, was a Yorkshireman by birth, and studied medicine at Guy's Hospital, becoming M.R.C S Eng in 1878 The Zulu War broke out soon after he qualified, and he went out to Zululand, serving in the Rorkes Drift area and elsewhere Returning home he was for a time clinical assistant at the Evelina Hospital for Children, and at the Hospital for Disorders of Women in Soho-square He eventually settled at Sidlesham, near Chichester, where in the western division of Sussex he had an extensive practice and held a number of appointments In the early 'nineties he left West Sussex for Burgess Hill, and here he practised until failing health necessitated his retirement in 1921, when over six hundred people subscribed to a testimonial fund Dr Apthorp married in 1897 a daughter of Captain Mailing, C M G , of Hove, and she survives him and great success of the Association were eloquently detailed He was also the author, with Mr. E. C. Vivian, of "The Way of the Red Cross" to which Queen Alexandra contributed a preface, and in which he was able to write with authority, for during the war he superintended for the Government the Red Cross propaganda In all these multifarious activities, and in the assistance of many philanthropic agencies, such as the Royal Female Orphanage at Beddington, he showed the same strenuous enthusiasm and close attention to detail, and there is no doubt that his death, at the early age of 50, was largely due to the perpetual strain to which he subjected a delicate organisation He had a serious breakdown over three months ago, from which he never rallied, and died of heart failure

Sir Ernest Hodder-Williams was knighted in 1919 in respect of his war services, and three years later was created C V.O , being also decorated by the Italian and Belgian Governments He was twice married, first to the daughter of Mr J G Oddy, who died in 1918, and secondly to Lilian, the daughter of Mr J. R Pakeman who survives him. The funeral service was held on Tuesday, April 12th, at the Westminster Chapel, where the Rev Dr J A Hutton spoke to a crowded audience, showing that the mystery of death at the prime of a full and useful life could only be made clear by Christian Faith and the realisation of Christian ideals A memorial service was also held the same day at Christ Church, Grey Friars, in the City The funeral took place privately.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Reading.

Reading is the first county borough to send us a report for 1926, and the following are some of the statistics —

Mid-year population—93,090 , Birth-rate 17 6 , Death-rates per 1000 of the population: All causes 12 2 , Tubercle 1·12 , Cancer 1 54 , Respiratory diseases with Influenza 1 9 , Heart disease 1 5 Death-rates per 1000 births Neo-natal, 24 , Infants 50 , Mothers from childbirth 3 0

Dr H J Milligan explains that the apparent decrease in population since 1925 is due to the fact that the Registrar-General has, in making his estimates, taken into account for the first time the electoral rolls throughout the country The inference from these is that Reading loses population by migration The death-rate from all causes, when standardised for sex and age constitution of the population becomes 10 6 The infant mortality is the lowest recorded, and it becomes more and more a neonatal matter Thus of 83 infant deaths, 24 occurred in the first week and 40 in the first 4 weeks The infant deaths from bronchitis and pneumonia are only about half, and from gastro-intestinal diseases less than one quarter of what they were in the years 1905–8 There is also the satisfaction that the survivors reach school in better physical condition, and that the school report shows that many of the entrants have already undergone remedial treatment—e g , for tonsils and adenoids

The post-war incidence of tuberculosis shows no tendency to decrease , the notifications of pulmonary tuberculosis in 1926 were the highest since 1918, and the deaths were only exceeded by one in the worst year, 1923 There is also no tendency for non-pulmonary forms to decline Two new pavilions have been added to the Park Hospital, and it is hoped to provide there accommodation for advanced female consumptives, as has already been done for men Dr Milligan mentions the very high percentage of tuberculous milks as a "disquieting feature" Out of 42 samples of milk, taken at random, 8 gave a positive result, equivalent to 17 per cent Last year the percentage was 14 In two of the cases the offending animal was not tracked out, probably owing to sales from the milk herd In any case, as Dr Milligan points out, this following-up after sampling is a long and tedious method of eliminating infected animals and a more efficient plan would be constant veterinary supervision and testing of herds The efforts of the National Institute for Research in Dairying keep up interest in this matter in the Reading district, and one licence for the production and sale of "Certified" milk and eleven for the sale of "Grade A (tuberculin-tested)" milk were issued in the Borough during the year There were no licences issued for Grade "A" or "pasteurised" milk, although a considerable proportion of the milk goes through some form of pasteurisation There were two prosecutions of milk vendors for bottling milk in the street

The improvements to the Maternity Home are nearing completion, and the new maternity department for complicated cases of labour at the Royal Berkshire Hospital, with one 5-bed ward and two single-bed wards, was opened during the year Midwives sent for medical aid in 20 per cent of the cases which they attended The new regulation issued by the Ministry, requiring the notification of a rise of temperature of 100 4° F for 24 hours or recurring within 24 hours, in parturient women came into force in October The Local Authority is also required to provide specialist services, if needed Four of the nine cases of puerperal fever ended fatally , three of them were in poor health before the onset of labour The nine cases of pyrexia notified under the new regulations all made good recoveries only three were seriously ill, two suffering from pelvic cellulitis and one from breast abscess Small-pox has not occurred in Reading for 20 years, but the hospital provision at the Whitley camp is quite unsuitable and inadequate, and only 20 per cent of the infants born are now successfully vaccinated The attendances at the infant welfare centres continue to increase Suitable foods are sold at cost price, but that this is not the primary attraction for attendance, says Dr. Milligan, is shown by the fact that two thirds of the infants brought to the centres are breast-fed

The number of new houses erected was 522, the highest since 1905 Of the total 173 were municipal, 231 received a subsidy, and 113 were the result of unaided private enterprise Nevertheless the shortage of working-class houses remains acute and, in the absence of alternative accommodation, slums and overcrowding cannot be tackled Eight small houses in ruinous condition, which should have disappeared long ago, were demolished during the year.

The activated sludge method of sewage disposal has now been in operation for a year, "but the results," Dr Milligan writes, "leave something to be desired By arrangement with the Company alterations are now being carried out in the design of the plant which it is hoped will effect the desired improvement in the character of the effluent"

In his school Report Dr Milligan says "when the results are compared over a period of years it will be found that there is a small but definite improvement in the physical condition of the children examined" The increases in height and weight are shown in tables, and a decrease is noted in the incidence of impetigo, ringworm, unclean heads and conditions accompanying neglect and malnutrition Thirteen out of 14 cases of otorrhœa selected during the year for ionisation "can at present be regarded as cured" The single dentist, Miss Mackinnon, is unable to overtake the whole of the work included in the model scheme of the Board of Education

The number of cases of known organic cardiac disease in the elementary school is 57 (boys 21, girls 36), classified as follows Associated with chorea, 6 , with acute and subacute rheumatism, 27 ; with pneumonia, 2 ; with severe measles and whooping-cough, 2 , with severe scarlet fever, 3 ; with no history of severe illness, 17 There were also found 27 rheumatic conditions with no apparent heart other class of person when it came to assessing Probate Duty, and other things, and on the passing of a practice from one person to another. They could not conceive a goodwill without having on their mind an attachment to a particular site. Take the case of a professional man in Harley-street. A man might wander along Harley-street and knock at a door not feeling quite sure who was behind the door, but he went there because the doctors in that street have a particular reputation. It was the fact that they practised in Harley-street which endowed them with the thing which was called goodwill. Therefore he contended that the site had a great relationship with goodwill and a greater relationship than was conceded in this Bill

Mr. ELLIS DAVIES said that the Bill was disappointing It did not quite carry out the promise made in the King s Speech; certainly it did not fulfil the hopes raised in that speech. It did not enable a lessee. for instance, to claim the enfranchisement of his property; it did not affect a building lease · and it did not affect the houses of professional men. He did not understand why, for instance. a doctor was not to have the right to claim goodwill in respect of the premises which he occupied.

Dr LITTLE said he wished to urge that the provisions of the Bill should apply to the premises occupied by professional men, and especially to doctors' premises There were two classes of doctors who were concerned. First, there were the consultants who were particularly resident in London and largely centred in one part—namely, the division which returned to Parliament, Sir D HOGG, the Attorney-General. He (Dr. LITTLE) hoped that the right hon. gentleman might recognise that a very large body of his constituents were disturbed by the proposals. The way in which the present law acted he might perhaps illustrate by giving the case of a surgeon who took a house for a short period who established a great reputation and at the end of 14 years they might suppose, was faced with the necessity either of removal or of renewing the lease. The landlord understood perfectly well that it was a very damaging thing for the man to remove from the neighbourhood and the lease immediately went up to an extortionate value. This Bill was going to increase that problem very much. Leases were going to be more difficult to obtain under the provisions of this Bill, unless it was made to apply to professional premises The Inland Revenue authorities regarded a doctor's house as business premises, and it seemed very unfair to exclude such houses from this Bill. Another class. perhaps more hardly hit, was the general medical practitioner He had before him a copy of a resolution which contained the plea of the general practitioner. The resolution read:—

> "That this meeting of . . . . . General Medical Practitioners urges the Government to make provision in the new Leasehold Reform Bill for security of holding for general practitioners who have been in many instances compelled to build on leasehold premises in order to comply with the requirements of the National Health Insurance Act with regard to waiting-room accommodation, &c., and to prevent ground landlords acquiring without compensation the goodwill of the practice which they have had no part or lot in creating.'

Members of the medical profession were too busy to take much part in politics. They were a silent profession, and in gratitude for their habitual self-effacement the Home Secretary ought to extend the provisions of this Bill to professional men.

Sir T. INSKIP (Solicitor-General). replying to the debate, said that such points as those raised by Dr LITTLE and others in regard to the goodwill attaching to premises occupied by doctors and professional men generally, were really Committee points. He could assure the House that the Government had not the least desire to reject any reasonable proposals for making the Bill more effective for dealing with those evils which most hon. Members recognised to exist in the working of the leasehold system.

On a division the amendment was rejected by 240 votes to 83 and the Bill was read a second time and committed to a Standing Committee.

THE BUDGET STATEMENT.

Mr CHURCHILL (Chancellor of the Exchequer), in the course of his annual Budget statement in the House of Commons on Monday, April 11th, said that as a result of the general strike and the coal dispute in 1926 there had been a decrease of revenue of over £17,500 000, and on the other hand an increase of expenditure of £14,000,000 This meant a total loss to the Exchequer of about £32,000,000. This was the overwhelming cause of the deficit of £36,500,000 on the Budget of 1926, and of a prospective loss in 1927 of £18,000,000. It further involved losses in 1928 and 1929 amounting to about £2,000,000 In spite of this, however, the revenue had survived. The exchange had stood like a rock without a higher Bank Rate than 5 per cent. with a reserve of gold larger than this time last year. and without any need to touch the precautionary American credits. These had never been used, and on the expiring of the original term next month they would not be renewed. The consuming power of the masses had been little affected by the troubles of last year. Beer and spirits alone among the main items of indirect taxation had reflected the results of the struggle. Income-tax, after deducting losses and deferments due to the strike. was £12,000,000 less than the estimate Estate duty and super-tax together showed an increase of £2,750,000. Sundry loans and miscellaneous revenue had exceeded the estimate by £8,500,000 In the total result the revenue, apart from the strike, was only £1.250,000 below the estimate; and with the strike it was £19,000,000 below the estimate. The expenditure had exceeded the Budget estimate last year by nearly £22,000,000 Of this £15·4 millions were on Consolidated Fund Services—almost entirely debt interest; £6 4 was on Supply Services, and £14,000,000 was due to the coal stoppage The Revenue and Expenditure of 1926 showed a deficit of £36,500,000 on the basis of a £60,000 000 Sinking Fund, instead of an estimated surplus of over £4,000 000 The total estimated expenditure for 1927 was £818,390,000. Referring to the efforts of the Government to reduce expenditure, Mr Churchill announced that during the present financial year the Ministry of Transport would be abolished, retaining the Road Department, the functions of the Ministry of Mines would be distributed to other departments: and the separate existence of the Overseas Trade Department would be terminated. Legislation would be required for this purpose. The extension of the Old Age Pensions to persons of 65 next January would involve a substantial increase in the Ministry of Health. Nevertheless it was proposed to make a marked contraction on new entries into the Civil Service. But this would not mean in itself any large diminution of expenditure. It would be necessary to secure definite reductions in expenditure, and assuming that the economies effected amounted to £8,500,000 the expenditure in 1928 would be the lowest of any year since the war. The further changes proposed in regard to income-tax were as follows. Schedule E (salaries) to be transferred to the basis of the preceding year. Super-tax in future to be assigned to the year prior to the one in which it is paid. This did not affect the basis on which it was assessed, nor the rate of charge nor date of payment, But income-tax and super-tax would be expressed in the form of a single graduated tax on income. A single annual return would be required on the basis of the taxpayer's total income for the preceding year It was also proposed to ask a body of experts to take in hand the codification of the income-tax law Small amendments would be made to prevent avoidance in connexion with subscriptions to charities and to give exemption from income-tax to profits of public schools and other similar trading profits of charities. There would be a reversion to the pre-1918 practice of collecting income-tax on Schedule A in one instalment payable on Jan. 1st. The new sources of revenue to meet the £35,000,000 to £40,000 000 required included a duty on table ware of translucent and vitrified pottery: the inclusion of imported motor tyres under the McKenna duties: a raising of the duty on matches; increases in the duties on wines and tobacco: the transfer of £12 000 000 from the Road Fund to the general funds of the State; and the reduction of the period of credit to brewers.

HOUSE OF COMMONS.

WEDNESDAY, APRIL 6TH.

Small-pox in Dundee.

Mr THOMAS JOHNSTON asked the Secretary of State for Scotland whether he could give the house any further information regarding the outbreak of small-pox in Dundee; and whether he was aware that on the steamer *Macharda*, just arrived at the mouth of the Tay with a cargo of jute from Calcutta. there were three small-pox cases: and what steps he proposed to take to assist the local health authority in protecting the citizens from this additional possible source of infection.—Sir JOHN GILMOUR replied: Up to this morning the number of cases of small-pox diagnosed in Dundee was 66 excluding the three cases on the steamer *Macharda*. Of these. 66 cases 60 have been removed to hospital. The remaining six were not discovered till after recovery, when they were removed to a reception house for observation. Sufficient lymph has been issued for 30,000 vaccinations. A total of 8500 school-children had been vaccinated up to yesterday. The medical officer of health of Dundee received a wireless message and notified my department of the three cases on the steamer *Macharda* before the vessel arrived in port. The duty of dealing with the present situation in *Dundee* rests primarily on the local authority, but the medical officers of the Scottish Board of Health are in close coöperation with the Public Health Department of the *City* and are rendering every assistance in their power The three cases on the *Macharda* provisionally diagnosed as small-pox were removed to hospital immediately on arrival on the afternoon of April 4th, and are very mild in

The marriage took place recently at St John's Church, Stanmore, of Thomas Leslie Wakley, only son of the late Thomas Wakley, L R C P , to Daisy Victoria Trist, eldest daughter of Mr Ronald Trist of Aylward's Chase, Stanmore The interest of the event for readers of The Lancet lies in the fact that Mr T L Wakley, the son of the late Editor of The Lancet, is grandson of Thomas Henry Wakley, for many years Editor of this paper, and great grandson of Thomas Wakley, M P , the founder

Dickinson Research Travelling Scholarship —Applications are invited for this scholarship, which is of the value of £300, for one year, and is open to recent medical graduates of the University of Manchester Particulars will be found in our advertisement columns

British Institute of Philosophical Studies —A course of six lectures on the Philosophy of Religion will be given by Dean Inge at 5 45 P M. on Thursdays, May 12th, 19th, and 26th, and June 2nd, 9th and 16th, at the Royal Society of Arts, 18, John-street, Adelphi, W C 2 (Fee 12*s* 6*d* Members half fee) Applications may be made to the Director of Studies, 88, Kingsway, London, W C 2

Jerusalem Ophthalmic Hospital —The report for 1926 of the Ophthalmic Hospital, maintained at Jerusalem by the Grand Priory in the British Realm of the Order of St John of Jerusalem, states that 18,127 patients, Moslems, Christians and Jews, were treated, and that there were 4234 operations In the six ophthalmic clinics in the rest of Palestine, at Nablus, Tulkeram, and Acre in the north, and Ramleh, Gaza, and Beersheba in the south, conducted by the Government and staffed with nurses trained, paid and supervised by the Order, there were, during the year, 13,576 new patients, 114,392 consultations, and 2684 operations

Auxiliary R A M C Funds —The annual meeting of the members of the Auxiliary Royal Army Medical Corps Funds will be held at 2 30 P M. on Friday, April 29th, at 11, Chandos street, Cavendish-square, W 1, when the annual report and financial statement for 1926 will be presented, and the officers and committee for the current year elected

First Aid for Injured Motorists —The service of first aid in case of motoring accidents organised by the Order of St John and the British Red Cross is now coming into operation The scheme centres upon the 400 ambulance stations which have been established throughout the country since the war First-aid posts are being formed from five to eight miles apart to link up the main ambulance stations These posts will be manned by trained workers and equipped with stretchers and first-aid appliances

New Nurses' Home at Kingston-upon-Thames —The foundation-stone was laid last week of a new nurses home and other additions to the Kingston and District Poor-law Hospital which is a recognised training institute for nurses The buildings, which have been designed by Mr F Danby Smith will have four floors with provision for a fifth when required, and the estimated cost of the scheme is about £100,000 There will be separate bedrooms for 100 nurses and five sisters, suites for four assistant matrons, a library, lecture-room, and sitting-room

Fellowship of Medicine and Post-Graduate Medical Association —The Fellowship has arranged various special courses for May Clinical and cystoscopic demonstrations will be given at the All Saints' Hospital from May 2nd to 28th and at 2 P M on every Wednesday during the four weeks there will be a special lecture on genito-urinary diseases From May 2nd for four weeks, an afternoon course on Psychological Medicine will be held at the Maudsley Hospital Another four weeks' course starting on May 2nd is one on Venereal Diseases at the London Lock Hospital At 5 P M on successive Wednesdays, from May 4th to 25th Prof Louise McIlroy will give lecture-demonstrations on antenatal diagnosis and treatment at the Royal Free Hospital An intensive course will be given at the Central London Throat, Nose and Ear Hospital from May 9th to 28th A clinical and an operative course is undertaken , they may be taken either together or separately, but early application is desirable as entry for the operative course is limited The National Hospital, Queen-square, will give a course on Diseases of the Nervous System, from May 9th to July 15th It will consist of clinical lectures and demonstrations, teaching in the out-patient department, and pathological lectures and demonstrations If there are enough entries courses will also be given on the Anatomy and Physiology of the Nervous System, and on methods of examination Two other courses lasting two weeks, begin on May 16th, at the Infants Hospital and at the Hampstead General Hospital The first is open to those interested in infant welfare work as well as to post-graduates, and the latter is primarily for the benefit of the general practitioner Copies of all syllabuses of the general course programme and of the *Post-Graduate Medical Journal* are obtainable from the Secretary of the Fellowship at 1, Wimpole-street, London, W 1

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Landlord and Tenant Bill.

On Thursday, April 7th, Sir W Joynson-Hicks (Home Secretary), in moving the second reading of the Landlord and Tenant (No 2) Bill, said that under the existing law restrictions were imposed by landlords on the development and improvement of leasehold property which, in this twentieth century, the Government thought should not be imposed There were, in many leases, covenants forbidding structural alterations without the consent of the landlord The landlord retained a power of veto over these alterations There was no tribunal to which the tenant could appeal There was, further, the power of the landlord to take a fine from the lessee before permitting improvements to be made, and also to exact an additional rent It was not proposed by this Bill to take away all these powers, but to give the tenant a right of appeal to an independent tribunal The decision of that tribunal would be binding on both parties The object was to protect the tenant against the action of a harsh or unconscionable landlord in regard to the question of compensation for goodwill, the renewal of a lease, the value of improvements made by the tenant and the exercise of power under restrictive covenants If any member of the House could show that any hardship would be inflicted on the good landlord he would be quite prepared to consider amendments in order that such a landlord should not be damnified The sole object of the Bill was to remove a grievance which had been felt by tenants for a great many years He believed that the Bill, fairly administered, as it would be under the Tribunal which was being set up, and with the restrictions and limitations contained in the Bill, would go a long way to remove many of those grievances The Bill was not retrospective in regard to the question of improvements, because, for various reasons, such a proposal would be inequitable

Mr **Dalton** moved the following amendment —

"That this House, being desirous of removing the evils inherent in the present leasehold system, and whilst welcoming a measure dealing with certain of these evils in relation to business premises, regrets that the measure is so drawn as to preclude its application to other premises "

He said that at a time when support was slipping away from the Government in various directions an effort was being made in this Bill to retain, at any rate, the support of certain sections of the community, notably the trading, shopkeeping, and tenant interests in business premises He was afraid, however, that when those interests for whom the Bill was primarily designed had an opportunity of examining it rather more closely they would see that it was a very small, niggardly, and unsatisfactory satisfaction of what the Labour Party regarded as their just claims The present leasehold system was apt to give rise to very grave injustice The present law permitted landlords to confiscate the fruits of the past labour and enterprise of their tenants, and to hamper and penalise the future enterprise and labour of the same tenants The refusal of any compensation for improvements made before the passing of this Bill was a very grave defect There was a severe limitation to the business premises which would be included under Clause 12 A large number of tenants, who were professional men, had just as real grievances in kind, if not in degree, as the traders and occupants of business premises in the narrower sense There was a large number of medical men, dentists and other professional people who were just as liable to suffer from confiscation by their landlords if the goodwill which they had brought to their practices by the improvements they had made to their premises, as any other class of people Particularly in the poorer parts of London a great many doctors had built up considerable practices When their leases came to an end they were either turned out on the streets or were compelled to pay a grossly excessive rent by their landlords, who were quite aware of the goodwill which had been created in respect of those practices The same argument applied to Clause 14, and the principle that consent ought not to be unreasonably withheld in regard to the issue of new leases should be applied to professional people as well as to the occupants of ordinary business premises

Sir W **Joynson-Hicks** • Part II of the Bill is not confined to business premises but relates to all premises

Mr **Dalton** That is so far as not unreasonably withholding consent ?

Sir W **Joynson-Hicks** Yes

Mr **Dalton** said he was glad that that had been made clear, but it was still true that Part II in a restrictive sense only applied to leases granted after the commencement of this Bill

Mr **MacLaren** seconded the amendment He said that professional men had their goodwill just as much as any that ten deaths from diphtheria have occurred in the Higher Broughton district this year The ages of the patients were as follows 1, 17 months; 1, 4 years, 2, 5 years, 2, 6 years, 1, 8 years, 2, 10 years, 1, 12 years All these patients were treated at the Infectious Diseases Hospital of the Salford Corporation and all received antitoxin

Disinfection of Telephone Mouthpieces

Mr **Day** asked the Postmaster-General whether any further consideration had been given by his department with a view to disinfecting telephone mouthpieces against such epidemics as influenza —Sir **William Mitchell-Thomson** replied I consider that the arrangements for regularly disinfecting the mouthpieces of public telephones are adequate

MONDAY, APRIL 11TH

Infant Mortality in Palestine

Colonel **Wedgwood** asked the Secretary of State for the Colonies what were the latest figures for infant mortality in Palestine, distinguishing if possible between Arab and Jew, and what steps were being taken to improve these figures —Mr **Amery** replied The infant mortality-rate per 1000 births was in 1924, 184 83, 1925, 188 64, and 1926, 163 15 Similar figures in respect of the various sections of the population of Palestine are not available As regards the latter part of the question, 29 non-government infant welfare centres have been established in Palestine, to many of which the Government had given considerable financial assistance In addition, two Government centres have been established, where special training by experienced British nursing sisters is given to women who wish to take up infant welfare work A training centre for midwives has been established, at which 43 women have already qualified, and a scheme is on foot for establishing nursing clinics in a number of villages

Cholera in India

Mr **Short** asked the Under Secretary of State for India whether he was in a position to give the House any information with regard to the epidemic of cholera in the Bombay presidency, and what special measures were being taken to arrest the spread of the disease —**Earl Winterton** replied The epidemic appears to have started in the Dharwas district in February last and to have since spread to three other districts Figures relating to these outbreaks have not yet been received The measures taken to arrest the spread of the disease are a matter for which the Local Government are responsible, but my noble friend the Secretary of State has no reason to suppose that all possible steps to this end are not being taken.

Registration of Opium Consumers

Mr **Gardner** asked the Secretary of State for the Colonies whether the registration of opium consumers was now generally applied in the Straits Settlements and Federated Malay States, and, if not, how soon it would be applied —Mr **Amery** replied Opium consumers are not registered in the Straits Settlements or the Federated Malay States though the governments of those territories have put into operation certain measures which are designed to lead up to registration of consumers if and when circumstances permit

Mr **Gardner** asked whether any system of registration of opium consumers had yet been introduced in North Borneo, and, if not, whether representations would be made to the British North Borneo Company urging the desirability of taking this step, as a first measure towards the suppression of opium smoking contemplated in the Hague and Geneva Opium Conventions.—Mr **Amery** replied The government of the State of North Borneo has recently introduced an experimental and tentative system of registration of consumers of opium

Secretaries for School Medical Officers

Dr **Vernon Davies** asked the President of the Board of Education how many local education authorities provided their medical officers with secretaries, who accompanied these medical officers on their visits to schools for the examination of children, and what duties were performed by these secretaries.—Lord **Eustace Percy** replied As I have already informed my hon friend, the arrangement made by the Lancashire authority appears to be exceptional The duties of these clerks are, I understand (i) To prepare the cards for routine and special medical inspection, (ii) to prepare the summaries for the school medical officer's monthly and annual reports, (iii) to send notices to parents and arrange times of interview with the assistant school medical officer, (iv) to arrange appointments for dental treatment of cases referred by the assistant school medical officer, (v) to arrange appointments for ophthalmic treatment, (vi) to arrange appointments for the orthopædic surgeon, to take down his reports in shorthand and to transcribe them, (vii) to take down in shorthand the assistant school medical officer's reports on school sanitation and to transcribe them *These duties, except the first, are practically* one and all such as are undertaken by the clerical staff of any large local education authority and are usually completed at the offices of the local education authority In certain areas this is also true of the first where an inspection card is made out at the office when the child is placed on a School Register

Sale of Poisons by Licence

Lieut -Colonel **Fremantle** asked the Home Secretary what traders, if any, interested in the sale of poisons by licence, or otherwise, were represented on the committee now sitting to investigate the working of the Poisons and Pharmacy Acts, and when the report of the committee might be expected.—Capt **King** (Financial Secretary to the War Office) replied I have been asked by the Lord President of the Council, who appointed the committee to say that traders engaged in the sale of poisons, both by wholesale and retail, are represented on the committee I am unable to say when the report of the committee may be expected

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

NORTH-EAST LONDON POST GRADUATE COLLEGE, The Prince of Wales's General Hospital, Tottenham, N

Wednesday, April 20th —2 30 P M to 5 P M, Medical Skin and Eye Clinics Operations

Thursday —11 30 A M, Dental Clinic 2 30 P M to 5 P M, Medical, Surgical, and Ear, Nose and Throat Clinics Operations

Appointments.

Holmes, Evelyn M, M B, Ch B Manch, has been appointed Medical Officer in charge of After Care Clinics, and House Surgeon, Shropshire Orthopædic Hospital, Oswestry.

Lesslie, Nona S, M B, Ch B St And, D P H, Assistant Medical Officer, Dundee Education Authority

Morris, Eileen, M B, B S Lond, House Surgeon to the New Sussex Hospital for Women and Children, Brighton

Stratford, H M, F R C S Edin, Consulting Surgeon to the Westminster General Dispensary

Westminster Hospital **Smith**, B A, M R C S, L R C P, Lond, and **Holmes, D P**, M B, B S, M R C S, L R C P Lond, House Physicians, **Hatthornthwaite R A**, M B, B Ch, M R C S, L R C P, House Surgeon, **Slater, P P**, M R C S, L R C P Lond, Resident Obstetric Assistant

Certifying Surgeons under the Factory and Workshop Acts **Holman, A G**, M R C S Eng, L R C P Lond (Aylsham) Norfolk), **Wilson, H M**, M B, Ch B Glasg Linton, Cambridge)

Vacancies.

For further information refer to the advertisement columns

Ashington Hospital, Northumberland —Jun H S £100

Aylesford, Kent, British Legion Village Hospital &c —Jun P £100

Bethlem Hospital, Lambeth-road S E —Two H P's £25 per quarter

Birkenhead General Hospital —Senior and Second H S 's £200 and £150 respectively

Blackburn and East Lancashire Royal Infirmary —Third H S £150

Bradford Royal Infirmary —H S and H P Each £150

British Guiana —Surgeon Specialist £1200

Charing Cross Hospital —Obstet Reg

Charing Cross Hospital, Institute of Pathology, 62 65, Chandos-street Strand, W C —Asst Pathologist £500 for first six months

Chester, East Lancashire Tuberculosis Colony, Barrowmore Hall, Great Barrow —Asst M O £250

Chester Royal Infirmary —Hon Surg to Ear, Nose, and Throat Dept

Coventry and Warwickshire Hospital —Hon S and Hon Asst P

East London Hospital for Children and Dispensary for Women, Shadwell, E —H P H S, and Cas O Each at rate of £125

East London, Municipality of the City of, South Africa —M O H £800 type All the crew have since been vaccinated and their quarters on board disinfected No native member of the crew is allowed to leave the vessel, but the European members are permitted to land on informing the medical officer of health or his representative where they are going No one except those engaged in unloading is allowed to go on board and the stevedores were offered vaccination before the work of unloading commenced I understand that the *Marharda* is leaving Dundee to-night

Mr JOHNSTON May I ask whether this cargo of jute has been disinfected in any way, if it is to be allowed to be sent to the mills, and if the workers are to be allowed to operate on the cargo of jute —Sir J GILMOUR The cargo of jute has never been handled or touched by any member of the crew and is being unloaded and placed in sheds

Mr JOHNSTON Are you going to allow it to be used in public works ?—Sir J GILMOUR I understand that the medical officer is satisfied there is no risk of cargo infection. It is not yet clear that those members of the crew who were diagnosed as having small-pox have actually got small-pox There has been no contact between the members of the crew and the cargo

Sir BASIL PETO Has the right hon gentleman any record of the number of cases among the 66 suffering from small-pox who have undergone recent vaccination ?—Sir J GILMOUR I think none of them, but I would not like to say off-hand

Mr JOHNSTON In the right hon gentleman's first answer did he not say that these cases had been diagnosed as small-pox cases, and did he not say in his supplementary answer that he was not sure that they were small-pox cases ? If they were small-pox cases, what guarantee has he that the raw jute has not been in contact with these people ?—Sir J GILMOUR Because the ship was loaded by other people at Calcutta, and the crew have never touched this cargo during the passage All I can say is that the wireless message which was sent to Dundee stated that they diagnosed these cases as small-pox On arrival every precaution was taken and the cases were removed to hospital, but it is very doubtful whether they are cases of small-pox, and, if they are, they are very mild cases

THURSDAY, APRIL 7TH.

Medical Certificates—Officers' Pensions

Major RUGGLES-BRISE asked the Minister of Pensions under what authority pensions or retired pay granted to officers under Article 539 of the Royal Warrant of 1914 for medical unfitness caused by military service had been reduced without, in each case, previous certification by the regulated medical authority that the disability did not seriously affect the officer's capacity for earning his living in civil life as required by the terms of the warrant —Major TRYON replied In every case where, for the purpose of the specially favourable terms of pension that may be granted under Article 539 to a Temporary Officer, it has to be decided whether his disability does or does not seriously affect his capacity for earning his living in civil life, the decision is supported by medical certification and, in addition, by clear evidence as to the officer's actual earnings

Silicosis in the Metal Grinding Industries

Mr W M ADAMSON asked the Home Secretary whether grinders' disease in the edge-tool trade was scheduled as an industrial disease, and what regulations were enforced for its prevention.—Sir WILLIAM JOYNSON-HICKS replied Silicosis has not been scheduled as an industrial disease under the Workmen's Compensation Act, but I have power to make special schemes under the Act to deal with it, and I am about to make a scheme which will embrace all the metal grinding industries including the edge-tool trade As regards prevention, a code of regulations is in force under the Factory Act

Mr W M ADAMSON asked the Home Secretary if he could furnish returns of cases in the edge-tool industry of grinders' disease, and whether he had any record of deaths due to this disease for the past ten years —Sir WILLIAM JOYNSON-HICKS replied Statistics of the incidence of this disease in the edge-tool industry are not available I regret therefore that a return of deaths caused by this disease in the industry cannot be furnished, but the honourable Member will find a detailed study of the subject in the report which was presented to Parliament in 1923

Schools for Defective Children

Mr GIBBINS asked the President of the Board of Education the number of defective children under the authority of the Board of Education, and what accommodation was provided for them —Lord EUSTACE PERCY replied According to the latest complete returns of local authorities, there were 32,975 mentally defective children in England and Wales in 1925 and 142,889 physically defective, of which 75,285 were classed as delicate and 40,400 as cripples There is accommodation in certified special schools for 17,233 mentally defective and 19,445 physically defective children The hon. Member will, of course, understand that the total number of physically defective children dealt with during any one year is considerably larger than the number for whom accommodation is provided in special schools, since most of the delicate children require only a relatively short period at an open-air school, and the majority of the cripples can be so far benefited by orthopædic treatment as to render them capable of profiting from the instruction in ordinary elementary schools

Secretaries to School Medical Officers

Dr VERNON DAVIES asked the President of the Board of Education if he was aware that 15 clerks were employed by the Lancashire education authority as secretaries to their school medical officers, with travelling and subsistence expenses while engaged upon their duties, and whether, seeing that in the case of other education authorities these duties were performed by the medical officers themselves, he would, in the interest of economy, arrange that the entire cost involved in this practice of the Lancashire authority should not be included in the Government grant —Lord EUSTACE PERCY replied The answer to the first part of the question is in the affirmative As regards the second part, my hon friend is mistaken in suggesting that in other similar areas these duties are performed by the medical officers themselves

Percentage of Insured Persons

Mr HERBERT WILLIAMS asked the Minister of Health what percentage of the population of England and Wales was insured under the National Health Insurance Act in 1913 and in 1926 or, if the figures for 1926 were not yet available, in 1925, and to what cause he attributed the change, if any.—Mr CHAMBERLAIN replied The percentage of the population of England and Wales insured under the National Health Insurance Act is estimated to have been approximately 32 per cent in 1913 and 36 per cent in 1925 The change in ratio is partly attributable to the change in the average age of the total population In the latter year also, the statistics of insured persons include disabled persons and persons over 70 years of age, while the 1913 statistics do not include such persons

Medical Members and Opticians Bill

Dr VERNON DAVIES asked the Minister of Health why no medical Member of this House had been asked to serve on the committee appointed to inquire into the registration of opticians, bearing in mind the fact that the subject was of great importance to the health of the people of this country, and that such a member could approach the question from a more detached standpoint than that of medical men actually in the practice of their profession —Mr CHAMBERLAIN replied I followed the usual practice in consulting the medical organisations specially concerned, and the three medical members were appointed on the nomination of the Royal College of Physicains, the Royal Society of Medicine, and the British Medical Association

Dr DAVIES Is my right hon friend aware that these gentlemen are probably representatives of those who are in actual practice at the present time, and is there any objection to having men on the Committee who have some knowledge of the subject, but who are not in actual practice, and may therefore be more or less unbiased ?—Mr CHAMBERLAIN I think it is very desirable that there should be representatives of those who have experience of actual practice, because I think that the opposition to the Bill comes very largely from that quarter

Lieut -Commander KENWORTHY Would it not be a compliment to the House if an actual member of the House were appointed —Mr CHAMBERLAIN That, of course, is a matter of opinion, but obviously members of the House will have their opportunity of discussing the Bill when it comes before the House

Consultative Health Council

Mr BENJAMIN SMITH asked the Minister of Health when the consultative council of his department on general health questions last met —Mr CHAMBERLAIN replied The Council last met on Dec 7th, 1921

FRIDAY, APRIL 8TH

Diphtheria Deaths in Manchester

Mr GROVES asked the Minister of Health how many deaths from diphtheria had occurred this year at Higher Broughton, Manchester, how old were the patients, whether they were treated at the fever hospital, and whether they received antitoxin —Mr CHAMBERLAIN replied I am informed

5 he found himself in Surat, and hearing of Asâlat an's request, volunteered his services through the East ia Company's President and Council Thenceforward was one of their servants, and as such used his influence various occasions in their behalf.

Boughton has long been regarded by historians as having tained the privileges of free trading from the Mogul nperor for curing his daughter the Princess Gahânârâ, o had been burned by her clothing catching fire But this cident is known to have occurred early in 1644, at which ne Boughton was at sea in the *Hopewell* Though Asâlat hân was in great favour with the Emperor, there is no idence that Boughton was ever at the Court of the Great ogul, and it is certain that, instead of an imperial fârmân ing granted to him, he obtained trading concessions by e order of Shâh Shujâ which were special to himself and ot general to the British. A fârmân was subsequently btained by the East India Company from the Prince at a st of 3000 rupees, granting free trade in his dominions, nd this was followed by others, each terminating on the eath or removal of successive rulers

NATIONAL LEAGUE FOR HEALTH, MATERNITY AND CHILD WELFARE

THE annual report of the League for 1926, representing its twenty-second year of life, shows evidence of increased activity all round Nearly 500 individual cases were dealt with, and while the majority came for help in finding temporary or permanent homes for children, convalescence, or accommodation for confinement, all sorts of applicants presented themselves from medical officers wanting help in starting child welfare centres to deserted husbands with young children left on their hands The Babies' Homes Department is responsible for three country convalescent homes for babies and toddlers, and, in conjunction with two other societies, for two nursery training schools and homes for babies in London. During the year 66 children stayed at the Marjorie Lumley toddlers' home, Maidenhead, 50 at the John Madocks home for definitely ill babies at Old Basing, and 67 at the Arkley home, near High Barnet The Babies' Hotel for healthy children of the professional class was moved from Snaresbrook to larger quarters at Clapham Park, and was always full Both here and at the Creagh Nursery Training School, in Kensington, students are received for training as nursery nurses. The Tired Mothers' Holiday Fund sent 16 women away for a fortnight's holiday, the mother in every case paying something towards the expense. A donation of £100 from the Ancient Order of Froth Blowers will enable this excellent branch of the League's work to carry on, just when the end of its resources appeared to be in sight. The publications department had a record year, the sales having reached more than 429,000 tems This is one of the few activities of the League which s not only self-supporting, but actually shows a profit

COCOA.

A BOOKLET of 48 pages with attractive photographs and coloured plates has been published by Messrs Cadbury Brothers Ltd, which tells the story of the cultivation of cocoa in a concise and instructive manner Starting with Cortez sailing home to Spain after his expedition to Mexico where he found the Emperor Montezuma, drinking *chocolatl*, (to use its original name) flavoured with vanilla and other spices, the author describes its introduction into Spain where it was mixed with sugar, into France under Louis XVI, and into England under the Commonwealth, and notes the establishment in London of the Cocoa Tree Club and White's Cocoa House, adjoining St James's Palace. Ecuador, Venezuela, Trinidad, San Domingo, Grenada and Ceylon have all contributed to the cultivation, the "Guayaquil" cocoa of Ecuador and the "Caracas" and "Criollo" of Venezuela cocoas being well-known names in early Victorian days Brazil too has taken up the cultivation, but the most remarkable progress has been made in recent years in the colony of the Gold Coast, which in 1891 exported raw cocoa to the value of only £4, whereas in 1925 the value was £8,000,000 In the last 15 years the production of cocoa has mounted from roughly 26,000 tons to ten times that amount. In 1910 the total world's production was 220,000 metric tons of 1000 kilos, and in 1925 the figure had risen to 495,000 tons, of which the United States of America consumed in metric tons 166,000, Germany 81 000, United Kingdom, 57,000, Holland 44,000 France 43,000, Spain 10,000, Italy 8000, and Canada, Australia and some other countries 52,000 The United States takes an easy first place by consuming one-third of the world supply. The Gold Coast has an area of about the same size as Great Britain and a population of 2,000,000 of whom only about 2500 are Europeans Its immense strides in material prosperity are remarkable In January and February of 1905 THE LANCET devoted some considerable attention to the subject of cocoa, and from these articles it can be gathered that the present day cocoa is very different from what it was in the early days According to Dr. A Wynter Blyth in a chapter on cocoa and chocolate in his well-known book on Foods published 45 years ago, the import of cocoa was only 9,000,000 pounds avoirdupois in 1875, and it could not be wondered at seeing the revelations of gross adulterations that had been made The perfecting of the processes of growth and preparation is evidently meeting its due reward

PRECAUTIONS IN THE USE OF X RAY EQUIPMENT

Messrs Watson and Sons (Electro-Medical), Ltd, Sunic House, 43, Parker-street, Kingsway, London, W.C 2, are issuing warning notices with every X ray equipment supplied, to ensure the safety of those who operate it A notice in permanent celluloid cover is fixed in the cabinet of the transformer, another is supplied loose for hanging on the wall of the X ray room, and a third, not celluloid covered, is attached to all instructions The text of the notice runs as follows:—

WARNING

1 Electricity is a fine Servant, but a very bad Master The following precautions should be carefully read and conscientiously observed by all who operate X ray equipment

2 The supply of current from the house main must be controlled by a double pole ironclad switch and fuses, with case suitably earthed and situated in an accessible position in the X ray room

3 *In no circumstances should any adjustment be attempted without first satisfying yourself that the main switch is off.*

4 Especial care should be taken in dealing with that portion of the equipment which carries the high tension current, the wires connected with X ray tubes, &c. Remember that ordinary protective measures such as rubber gloves, &c, are useless and that fatal results may ensue if these wires are touched when the set is in operation Keep at a safe distance from all high tension wires

5 All units partly or wholly constructed of metal, the Couch, Screening Stand, Tube Stand, &c, must be properly earthed. Terminals are provided for this purpose

6 Avoid slack high tension leads They should be replaced wherever possible by permanent rigid connections

7 Clean all insulators of ebonite, paxolin, porcelain, &c, each day with a dry cloth Accumulation of dust and moisture causes leakage and possible breakdown

8 Always operate the controls in the same order Standard practice should become a habit

9 Remember to see that all switches are in the off position immediately after making an exposure

10 Do not neglect to use the devices supplied to afford protection against scattered radiation The tube should be properly enclosed and every precaution should be taken to protect the operator from exposure to scattered as well as direct radiation.

First, last and always, never attempt any adjustment whatsoever without satisfying yourself that the main switch is off.

CHILDREN'S ALLOWANCES

A REPORT [1] presented to the Council of the Women's National Liberal Federation finds that the level of wages is influenced by the supposition that a male wage-earner may require to feed and clothe a wife and two or three children, and that, though in many cases these needs are imaginary, the belief in their existence underlies the different scale of payment offered to men and women for similar work When the introduction of machinery drove the workers into factories, men were accompanied by their wives and children, with the result that, however badly individuals were paid, the large family earned more than the small one The Factory and Education Acts, by forbidding young children to work and insisting on their attendance at school, reduced family incomes and made it much harder for the mother to go out to work, leading, in many cases, to economic dependence of the wife and children on the male worker So long as wages are based on the needs of the supposed average family of three children (actually found in 6 4 per cent of wage-earners), it is obvious that the large family is at a disadvantage, though the general living standard has improved owing to the growing tendency to restrict the birth-rate The report proposes that wages should be determined on the requirements of husband and wife, and that a uniform allowance, separate from wages and payable to the mother, should be made in respect of each dependent child This rearrangement of the national wages bill could be carried out either by contributory insurance or by the industrial pool system The latter scheme, which has proved successful on the continent—notably in France and Belgium—is favoured by the report, a section of which is devoted to a description of the working of children's allowances in other countries

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[1] Children's Allowances Final report of the Family Endowment Enquiry Committee of the Women's National Liberal Federation, 1, Great George-street, Westminster, S W. 1 *3d*

Essex, Administrative County of—Obstetric Specialist £5 5s per Consultation

Exeter, Royal Devon and Exeter Hospital—Res Cas O At rate of £100

Gloucester, Standish House Sanatorium, Stonehouse—Asst. M O £250

Gloucestershire Royal Infirmary and Eye Institution—Asst H S At rate of £120

Gravesend and North Kent Hospital—Jun H S £150

Guildford, Royal Surrey County Hospital—H S £150

Kent Education Committee, School Medical Service—Dental S £500

Lancaster Borough—Asst M O H, &c £500

Leeds, City of—Asst M O H £900

Leigh Infirmary, Leigh, Lancashire—Res H S £150

Manchester City—Asst Tuberculosis O. £600

Manchester Royal Infirmary—Dickinson Research Travelling Scholarship in Medicine £300 Also Jun H S and Anæsthetist Each at rate of £100

Marseilles, Queen Alexandra Memorial Hospital—Res H S

Middlesex County Council Dental Service—Asst Dental O £500

Miller General Hospital for South East London, Greenwich-road, S E—Out-Patient Officer £150 Also Hon Asst Orthopædic S

Newcastle-on-Tyne, Royal Victoria Infirmary—Hon S

Northern Rhodesia—Medical Woman for Pioneer Work at Mbereshi

Preston, Lancs, County Mental Hospital, Whittingham—Sixth Asst M O £350

Prestwich County Mental Hospital, near Manchester—Asst M O £350

Putney Hospital, Lower Common, Putney, S W—Res M O £150

Royal Waterloo Hospital for Children and Women, Waterloo-road, S E—H S At rate of £100

St Leonards on-Sea, Buchanan Hospital—Two Out-Patient P's

Stockton on-Tees, Stockton and Thornaby Hospital—Jun Res M O £150

Stoke on-Trent City Education Committee—Asst School M O £500

Walsall General Hospital—Sen H S, and Jun H S At rate of £200 and £125 respectively

West London Hospital, Hammersmith road, W—Hon Med Radiologist Also Asst P

Western Australia, Hospital for the Insane, Claremont—Pathologist and Bacteriologist £576 to £708

Births, Marriages, and Deaths.

BIRTHS

ADSHEAD—On April 7th, the wife of Surgeon-Commander G P Adshead, Royal Navy, H M S *Impregnable*, of a daughter

CAMPBELL—On April 3rd at a nursing home, Looe, the wife of Frederick Campbell, M D D P H, of Polperro, Cornwall, of a son

MACCALLAN—On April 9th, 1927, at 33 Welbeck street, London, W, the wife of A F MacCallan, C B E, M D, F R C S, of a son

MACPHAIL—On April 6th at Greylees, Sleaford, the wife of I R Macphail, L R C P & S Edin, of a daughter.

DEATHS.

SYMONS—On Feb 26th, at Lincluden, Palmer-place, North Adelaide, South Australia, Mark Johnston Symons, M D

N B—A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

CONGRESS OF PSYCHOTHERAPY IN NAUHEIM—The second General Congress of Psychotherapy will be held from April 27th–30th at Bad Nauheim, when lectures and addresses will be given by specialists from all parts of Germany The subject of psycho-analysis, for instance, will be dealt with by Schilder (Vienna), Goldstein (Frankfort-on-Main), Binswanger (Kreuzlingen), and Simmel (Berlin), while all branches of the subject from hypnosis to curative pædagogy will be included The Congress is intended not only for specialists but as an opportunity of interesting the medical profession as a whole in the mental side of therapeutics

PROGRESS OF CHARING CROSS HOSPITAL—At the annual meeting of the board of governors it was stated that of the £70,000 required for the purchase of the adjoining old building and site of the Royal Westminster Ophthalmic Hospital, £16,000 had actually been paid and a further sum of nearly £10,000 was available Mr George Verity, the chairman, announced that, through the generosity of certain well-wishers, the Institute of Pathology had been placed on a financial basis which had enabled the hospital to create a service that would be of the greatest value to the public In an address read to the York Women's Luncheon Club, Mr Philip Inman, the superintendent of Charing Cross Hospital, stated that it deals with 2000 accident cases every week

Notes, Comments, and Abstract

GABRIEL BOUGHTON.

BY GEORGE C PEACHEY,

SURGEON, BOUGHTON AND EAST INDIA TRADE.

THE early history of British trade in Bengal contains this picturesque story, according to which the concession that enabled the East India Company's servants t establish factories and to trade duty-free in that province were obtained through the magnanimous behaviour o a surgeon named Gabriel Boughton, otherwise Bowden who, having cured first an imperial princess and then on of the consorts of the Prince Shujâ, the viceroy of Bengal declined to receive any personal remuneration, but begged that in lieu thereof his fellow countrymen might be granted the commercial privileges they had long desired

The story, which is mentioned by Wadd in his "Mems Maxims and Memories" (1827) and many others, has been traced by Sir William Foster[1] to the copy of a memorandum formerly among the "Factory Records, Fort St. George" The original document is no longer extant, and there is internal evidence that much of it was derived from hearsay, and was in many respects inaccurate As will be seen, Boughton's alleged cure of the imperial princess, in 1636, is apocryphal, and his reported magnanimous refusal of compensation for services rendered in favour of trading concessions for his countrymen is equally unfounded. Still his influence in procuring permission to trade in Bengal, both for himself and the East India Company, whom he afterwards served, are facts which possess a lasting historical interest

Nothing of Gabriel Boughton's early history has been recovered until, in January, 1644, he sailed from Madras on the *Hopewell*, in which vessel he had probably left England as ship surgeon just two years before Meeting with very bad weather, his ship sprang a leak, and to save themselves from foundering they threw their lading overboard and made for Mauritius There the *Hopewell* fell in with the *Dolphin* which had met with similar misfortune, and after refitting, the two ships went out together to Madagasca and the Comoros; but finding themselves in no conditio to complete the voyage to Europe, they sailed for Surat which was reached in September, 1644 Asâlat Khân, a especial favourite of the Mogul Emperor, Shâh Jahân had long importuned the East India Company's Presiden and Council at Surat to supply him with an English docto probably for his own infirmities, and the difficulty of findin one who could be spared and was willing to accept th employment had alone prevented them from acceding t his requests But in January, 1645, Gabriel Boughton "late chirurgeon to the *Hopewell*, being at Surat, very wel qualified and willing to stay," was engaged upon "tha service and proceeded to Agra In August–September, 164 Boughton was at Balkh, in Afghan Turkestan—probabl he and the companion mentioned in his letters of thos dates were the first Englishmen to enter that town—an there is evidence that he was there in attendance as body surgeon on Asâlat Khân, who was taking part with th imperial forces in the conquest of Balkh, of which he ha been appointed governor by the Emperor Boughto describes it as "one of the unwholesomest countrie that ever I was in in my life, for never since my entranc into this city can I be in perfect health"

Asâlat Khân is said to have died in 1647, and Boughto is next found at Rajmahal at the Court of Shâh Shujâ who was then in charge of the province of Bengal Ther he was called in to attend one of that prince's favourit concubines, and having wrought a cure, he was taken int great favour and allowed ten rupees a day This prince ha been given by his father the government of all the revenue of Bengal, Bihar, and Orissa, and he offered to Boughton, if he desired to trade, freedom from customs and all other duties, and gave him two orders to that effect These privileges Boughton passed on to the President at Surat and about two years later a ship arrived from England and was permitted to trade free of all duties, probably owing to the good offices of Boughton with his patron He was still at Rajmahal in December, 1650, when he is described as "chirurgeon to the Prince," and there is reason to believe that he was alive in January, 1652, though he was certainly dead before August, 1653 His widow, "a Mogullana or Moorish woman," subsequently remarried, leaving issue by her first husband, a son, Gabriel Boughton, of whom nothing is known

The conclusions arrived at are that Boughton was at first a ship's surgeon trading with the East, that in January,

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[1] The Indian Antiquary, September 1911, and May, 1912

Lumleian Lectures

ON THE

MUSCULAR MECHANISM OF RESPIRATION AND ITS DISORDERS.

The Third Lumleian Lecture delivered before the Royal College of Physicians of London on March 29th

By Sir CHARLTON BRISCOE, Bart.,
M.D., F.R.C.P.Lond.,
PHYSICIAN TO KING'S COLLEGE HOSPITAL AND TO ST. JOHN AND ST. ELIZABETH HOSPITAL.

LECTURE III.*

In this lecture I shall try to apply the deductions of the former lectures to certain clinical conditions. In effect I believe I have shown three points: (1) That accentuated tonic conditions of muscle are liable to occur as the result of the conditions, reflexes, &c., described. (2) Such tonic conditions affect the muscles which operate on the thorax; no similar effect has been found in the diaphragm. (3) The persistent contractions of these muscles lead, as a rule, to an elevation of the whole or parts of the thorax. I have also shown that elevation of the thorax is unfavourable to the effective contraction of the diaphragm. There is thus a marked interrelation between the elevation of the thorax and defective diaphragm contraction, and the clinical conditions which I shall describe are equally related, and treatment will also show a good deal of common ground. I shall, however, separate as far as possible these two points, the result of tonic contraction on the one hand, from those of defective diaphragmatic contraction on the other, and I shall deal with the former and its connexion with pain forthwith.

Tonic Contraction and Pain.

It is common knowledge that an overtired muscle will ache, but the conditions under which it will cause definite pain are but little understood. My evidence that these muscles do cause the pains of which patients complain is: (1) That the muscles in question can be felt to be in a state of tonic contraction. (2) That they are tender to pressure. (3) That pressure on them elicits or causes an exacerbation of the pain of which the patients complain, and is frequently recognised by them as their particular pain. (4) That taking the strain off the muscle and enabling it to relax produces a cessation of the pain.

It is generally recognised that pain arising in nerves or certain viscera may be felt locally or have a distal reference. Baker[23] showed that skeletal muscle can give rise to referred pain in the case of flat-foot. I have verified this in cases of that condition and also have found referred areas and vasomotor changes in other muscles, the abductor indices and trapezius. The areas of referred pains for these muscles were described in my paper on the "Anginal Syndrome."[24] In that paper I also described the areas of reference of pain for the respiratory muscles. Thus, as with other muscles, pain produced by tonic contraction of a respiratory muscle may be local or referred or both.

More interesting than the question of the reference of the pain is the fact that frequently patients will recognise the pain produced by pressure on a sensitive muscle as being the pain of which they have had experience and of which they complain. Sometimes patients will even go further than recognising their own particular pain and will give their interpretation of it in such expressions as "that prevents my swallowing," "that grips my throat," or "it presses on my heart," or "it prevents my breathing." The remarks quoted in the last sentence have been forthcoming as the result of pressure on a sensitive triangularis sterni in different cases, and it is remarkable that a sensitive muscle should, in different individuals, be capable of producing sensations so variously interpreted.

Pain from any tonic muscle does not appear immediately the tonic condition is developed. The intensity of the muscle action also plays a part. The pain from the tonic muscle lasts only as long as the muscle is in that state and commences to decline when the tonic condition relaxes. An ache may persist for some hours. In one of my examples of a tonic trapezius muscle giving referred pain, the pain was longer in appearing if the arm alone was held out than it was if in addition a watering-can was held in the hand. Therefore, as a rule, there are periods following the diminution of the operative cause in which the pain is absent. This is well known in connexion with the common type of pain arising from gastric conditions. Similarly pains arising from over-exertion resulting in dyspnœa are intermittent. In functional cases it is more liable to be constant because the mental condition continues to operate.

Static Conditions.

In the consideration of clinical conditions interpreted in the light of these lectures the first example I shall give is purely static. Spinal curvature in the dorsal region leads to a widening of the intercostal spaces on the convex side. I have found a number of such individuals who, about the age of 50, complain of varying degrees of pain in the chest, more marked on exertion.

Thus in the case of a lady who complained of pain in the left chest on walking up a certain hill to her home, it was found that there was a spinal curvature with the convexity to the left in the dorsal region. The left third intercostal was tender to pressure, and the second, third and fourth intercostal spaces were more open than those on the right and the muscles were tonically contracted. Her pelvis was tilted which in turn was due to inequality in the length of the legs. Within a week of correcting this by the addition of half an inch to the heel she could negotiate the hill comfortably. When seen a month later the intercostal spaces on the right and left sides were similar; the muscles were inspiratory. Pain recurred when she neglected wearing the correction of the heel and again disappeared when the correction was employed. Anxiety over a son-in-law caused for a short time a temporary recurrence of pain, even when wearing the elevated heel.

The second instance I would bring forward is that of the prominent abdomen. If with this the shoulders are forward discomfort does not result. If, however, the shoulders are thrown back the ideal conditions ensue for accentuation of the thoracic type of breathing. The ache in the chest and pain in the neck, shoulders, and arms arising from the scalenes and intercostal muscles occur in these individuals, of whom the emphysematous and pregnant women are instances. It is an aphorism that the symptoms of emphysema are made worse by accretions of body-weight, a considerable part of which goes on to the abdomen. Reduction of the size of the abdomen tends to produce a more forward position of the shoulders in order to maintain the balance of the body. In due course Nature restores the balance of the pregnant woman. In many cases of this habit of body a sternal pain accentuated by pressure on the overtaxed triangularis sterni* has also been present. This muscle is one of the smaller muscles of expiration in the thoracic type.

Psychic Conditions.

The effect of persistent emotional reactions is well exemplified by the following case:—

A girl of 27, a cashier, complained of pain in the palms of the hands, ulnar side of the forearms and internal arm of persistent character day and night, and also of pains in the occipital region. The pains were accentuated by pressure on the scalenes and upper intercostals. At first she was

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* Lectures I. and II. appeared in THE LANCET of March 26th and April [illegible] year.

* The asterisks throughout refer to points demonstrated by means of lantern slides.

NEW PREPARATIONS

COMPOUND AGOTAN BRAND OINTMENT—We received this drug previously from Howards and Sons, Ltd , Ilford, in the form of tablets, in which shape we commented favourably upon it They now supply it as an ointment, the active ingredient being phenyl cinchoninic acid Agotan is of value by increasing the excretion of uric acid and urates in the urine, and has been found to give good results in various conditions of rheumatism and rheumatic arthritis, in lumbago, and in sciatic and other forms of neuralgia The manufacturers possess evidence also of beneficial results obtained in erythema and urticaria, and in chilblains The tablets (which were reported upon in THE LANCET of Jan 3rd, 1925) can be taken with advantage while the ointment is in local use Full directions for application are included with the drug

LAXA is a combination of sterilised wheat bran and agar-agar, and is so prepared that it is crisp and palatable when dry, while, if it should become tough with the absorption of moisture, those pleasant qualities can be restored by placing the food in the oven The directions are that from half a biscuit to two biscuits should be taken at each meal according to individual requirements, they can be substituted for bread or alternated with bread during the meal The use of agar-agar as facilitating bowel movements is well known, and the new combination is a palatable one It is supplied by Coates and Cooper, 41, Gt Tower-street, E C 3.

(1) **NEUTRALON**, (2) **BELLADONNA NEUTRALON**—Neutralon is a synthetic aluminium silicate with the addition, in the second case, of 0 6 per cent of extract of belladonna It is prepared by Schering Ltd , 3, Lloyd's-avenue, E C 3, and is a fine white odourless tasteless powder, insoluble in water but gradually splitting, under the influence of dilute hydrochloric acid, into aluminium chloride and silicic acid The pharmacological properties claimed for it are based upon this decomposition, it being assumed that the silicic acid will remain as a protective covering to the stomach while the aluminium chloride set free will act as an astringent A good deal of medical evidence has been published showing that the drug possesses antacid astringent and analgesic properties, so that its trial would be reasonable in affections of the gastric mucous membranes When there is an addition of belladonna the preparation should be administered with care if given for a long period.

THEORIES ABOUT HIGH BLOOD PRESSURE

WHILE the search for the cause of essential hypertension still proceeds, some find in the magic word toxæmia a solution of the whole problem To deal with toxins is one of the functions of the liver, hence, they say, let the liver be stimulated to action and the blood pressure will be lowered The failure of the liver to deal with the toxæmia is believed by Dr H R Harrower to be due to the absence of an internal secretion which he claims to have isolated and calls "anabolin" In a book which has recently been published ("Anabolin, Detoxication and Hypertension," Baillière, Tindall and Cox, 1927, 10s 6d) he gives reasons for his conviction that "anabolin" is neither histamine nor choline, and that it does not contain enough of these substances to produce the effect of lowering blood pressure that he claims for it The clinical records designed to prove that anabolin given by the mouth to patients with essential hypertension has this effect are disappointing since the cases are not described in sufficient detail Moreover, the criticism based upon the fact that blood pressure has a habit of falling in these patients, at any rate temporarily, is met by the statement that the fall cannot be coincidence in every case The facts that in an historical introduction Dr Harrower is grouped with Glisson, Malpighi, and Claude Bernard, and that elsewhere in the book he refers to his great achievement (parallel with the discovery of insulin), are unlikely to influence men of science in favour of his claims

"HE TOLD HIM ABOUT——, A SIMPLE HARMLESS PREVENTATIVE"

To the Editor of THE LANCET

SIR,—I have just seen a half-page illustrated advertisement in an American medical journal which represents a youth, with an expression of eager anticipation, listening to his father's words The latter impressed, as we are told, by knowledge of "the dangers of hidden diseases and their serious consequences in later life" is, by reason of his son having reached "the age of maturity, the dangerous age," advising him concerning the course of action which he should adopt in relation to his sexual life His task over, the father feels that "he had done his duty" and "solved a difficult problem in an efficient and simple way" We can imagine the nature of the counsel which, as a wise father, he has laid before his son With a vivid recollection of his own temptations he has dwelt upon an ideal, which he once held though he may possibly have failed to realise That ideal may have had a religious or ethical foundation but it would, in any event, be associated in the boy's mind with a chivalrous conception of the dignity and purity of womanhood

But no, our imagination runs astray, for here we have a father who devoid of any form of idealism is doing his utmost to make his son even as himself What did he say by way of counsel? "He told him about——, a simple, harmless PREVENTATIVE against diseases, a product well-known to the medical profession." In other words he essayed to show him how he might indulge his lust without paying any physical penalty His efficient and simple solution of his son's difficulty was to rule out the higher and to be ruled by the lower factors in his nature

To whom can such a libidinous advertisement commend itself? Only when all methods of dissuasion from sexual promiscuity have proved futile, when all worthy ideals have failed in their appeal, should the individual be instructed how to give rein to his erotic instincts by the adoption of measures calculated but never guaranteed to secure immunity from disease But surely this counsel should be a last resort, given not primarily for the sake of the individual, but for the safety of other members of society whom he might injure

I trust the journal will disclaim an advertisement likely to pervert rather than sublimate the physical strength of Young America I am, Sir, yours faithfully,

CUSTOS

A SILENT HANDICAP [1]

THIS book is a sympathetic account of the lives of several children born deaf, and every chapter helps to build it into a first-class argument for the higher education of the deaf subject The handicap under which these children and their similars are placed is well explained, sympathy with them is demanded throughout in a logical and not a mawkish way, and the varying attitudes of those who find themselves in contact with the deaf are brought out with precision and considerable humour The passages which describe the evolution of Geoff, the portrait of Mr Dockety, and the pictures of the various social and educational functions at which the children are present, all show insight and a really tender understanding The different futures which lie before the born deaf are shown to depend upon the provision of proper opportunities for development, as well as on the special aptitude of the subjects As propaganda for the promotion of a training for the deaf enabling them to use for the public good the gifts which they normally possess the book will be useful, and as a well-told and interesting story it should be a success

VENOMOUS SPIDERS

To the Editor of THE LANCET

SIR,—In your issue of Dec 11th, 1926, you commented on the venomous bites of certain spiders This sort, a black spider with a red spot on its back, has an extensive distribution It is not uncommon in Australia, and when it bites a person, as occasionally happens, the consequences are serious, as it causes intense generalised pain, which may last for several days I enclose a cutting from an Adelaide daily newspaper which shows, if the facts are to be depended on, that the trap door spider also is capable of inflicting serious harm and may be fatal I have some specimens of this spider's lair, with the trap door complete It appears to be identical with the form met with in Europe I have not, however, seen the spider that inhabits it

While on the subject of unusual poisons I should like to ask what truth there is in the statement (Timbs' "Doctors and Patients") that the secret poison used by the gypsies to kill pigs, &c , is a powder consisting of the spores of a fungus, which, when it enters the mouth, grows into innumerable long, fine filaments that enter the air passages and lungs and cause speedy death It is also stated that a boy in Italy died in this way in 1800

I am, Sir, yours faithfully,

F LUCAS BENHAM, M D , M R C P

Semaphore, South Australia, Feb 28th, 1927 egree of thoracic breathing which promotes an ssociated ineffective diaphragm contraction.* The rganism seems to attempt to remedy the defect ather by rapidity than by depth of respiration Hence in excessive thoracic breathing the defect is perpetuated and panting ensues In these dyspnœa is present on exertion In talking a breath is taken too frequently, and, of course speaking when out walking is practically impossible. The pulse is rapid and may be irregular in size Pains arising from the respiratory muscles are frequent at night when posture may accentuate the condition Giddiness and a tendency to faint also occurs Perhaps a few words may be said on the relationship of the circulation and respiration

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[1] A Silent Handicap By Ann Denman London Edward Arnold and Co 1927 Pp 313 7s 6d

[2] The cutting describes an inquest on an infant whose death is said to have been due to the bite of a trap door spider of a species "which was both venomous and rare" The case was stated to be the first on record in which a person had died from the bite of a trap door spider

Respiration is, of course, developed as an accessory to the more important circulation The supply of blood must be either by gravity, aspiration or pumping action The first two are more or less constant in any given position The pump may vary Considerable importance has been attributed[25] to the presence of positive intra-abdominal pressure whereby the blood is driven from the abdominal cistern up and to the heart Such positive pressure is dependent on the walls of the abdomen, either muscular or connective tissue In those tending to the thoracic type the diaphragm descends but little during inspiration and the muscular parts of the abdominal wall are inactive During expiration the muscles of the abdominal wall may be contracting but the diaphragm is inactive. Pressure can therefore, never be high In contrast the diaphragmatic type in inspiration, contract the diaphragm and muscles of the abdomen simultaneously, but relax in expiration In inspiration, therefore the intra-abdominal pressure must be relatively high but in expiration very low If the diaphragmatic type changes to thoracic the intra-abdominal pressure and blood-supply will not be that to which he is accustomed It is a surmise as to what may happen in any given case From the clinical point of view cardiac rapidity frequently results In the nervous as in life examination, the pulse can often be reduced from 100 to 70 by making the individual breathe with the diaphragm In the case of a candidate for commission, suitable in every respect except for cardiac rapidity, the pulse under examination when supine was 130 per minute By the means to be described later of making the diaphragm contract the rate came to 80 at once It is not my purpose to pursue this question further, but to offer a simple explanation for the symptoms in these cases and to accentuate the point that when diaphragmatic action departs from the normal for the individual alteration in pulse may follow

Thus excessive thoracic breathing promotes dyspnœa under many different circumstances I suggested this mechanism as being a possible factor in cardiac dyspnœa I believe it is the main factor in pregnancy emotional conditions, and the convalescent stage of pleurisy.

Before passing to consider treatment, we may summarise our conclusions An inspiration must continue until a certain amount of air has passed into the lungs, and when this has been attained the inspiratory act will cease. There is a selective action residing in the muscles dependent on the stretch under which they may be, and this decides whether that muscle or its neighbour will contract If the inspiration is prolonged the muscles which were under a diminished degree of stretch at the commencement of the act will eventually be called into action The diaphragm is the principal muscle of respiration and respiration should be carried out by means of contraction of the dome of this muscle Conditions extraneous to the respiratory system proper arise, in which the normal relationships of stretch in the respiratory muscles are altered This leads to a substitution of the mechanism of the thorax at the expense of the diaphragm and induces dyspnœa This substitution compels certain muscles of the thorax to action not inherently natural to them and of the nature of persistent tonic spasm Excessive tonic contraction, if it persists gives rise to tenderness on palpation and to subjective pains which may be local or referred

CONCERNING TREATMENT IN GENERAL

It is obvious that if I am correct in my views that persistent tonic contraction of muscles is the cause of pain and excessive thoracic breathing of disability as mentioned above these symptoms should be relieved by any means through which strain is removed and the muscles are enabled to relax The tonic muscles are those connected to the thorax, and so concerned with thoracic respiration Relief can be afforded in two ways (1) by promoting increased contraction of the diaphragm, (2) by mechanical means instituted for the direct relief of strain

There should of course, be no impediment to the descent of the diaphragm Clothes on the abdomen should be loose This applies as much to men's clothing as to that of women The tape of pyjamas should be fastened quite loosely at night and the leather belt, so frequently adopted and looked upon as a charm by the labourer should be given up The latter is usually a continuation of the mode adopted in youth, when the respiratory mechanism is very labile and capable of free accommodation Such a belt is useful in youth to promote a development of the upper part of the thorax which is thus forced into action at the expense of the diaphragm It should not be allowed after the age of 40

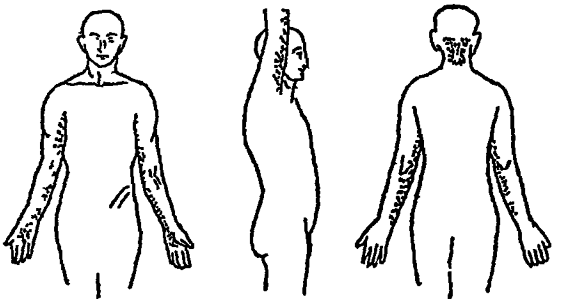
RE-EDUCATING THE DIAPHRAGM.

Under this heading also comes the question of training people to contract the diaphragm There are a certain number of people such as asthmatics, and individuals who have had some inflammatory condition in the chest in whom the diaphragm appears to be inactive or to be what may be described as lazy. There is no doubt that training the diaphragm to contract voluntarily is most important and leads to good results I would however say a word of caution on the means by which this should be produced It is well known that if an individual is directed to take a deep breath, in the majority of cases this instruction is obeyed by a big thoracic elevation and without any protrusion of the epigastrium. From the result of considerable experience I am quite sure that at first no mention of breathing should be made. The individual should be directed to push out the abdomen In some cases this command cannot be obeyed until after considerable encouragement It is the more easily carried out with the patient in a semi-recumbent position with the back not extended—i e not on a flat back bench, but on one which is rendered hollow so that the spine will not be extended This exercise should not be persisted in for too long a time Volitional efforts at respiration produce fatigue Instructions should therefore be given that four or five efforts at a time should be made for a few days and afterwards be increased It is advisable to fix definite periods, such as when the clock strikes the hour before meals, &c I mention this with some detail because when an individual has acquired a faulty habit of voluntary breathing, especially after instruction it is frequently difficult to get him to revert to the proper type * I have found this treatment beneficial in cases of asthma and it should be continued till the individual has a complete volitional control of his respiratory mechanism so that he can on command contract the diaphragm to the full I have not met the asthmatic patient who can stop his attack by voluntary breathing in this manner, but I have seen several who can abort an attack if they wake up before it has fully developed, and this remains a permanent feature of their disease and cannot be considered as one of the transient benefits of psychic influence.

Still under the first heading of promoting a contraction of the diaphragm I must refer to the much debated question of the value of psycho-analysis.

thought to be an instance of occupation neurosis (Fig 1) Her work involved standing all day and writing with the elbows unsupported She was of the build and type of visceroptosis A tracing of her chest showed marked thoracic type of breathing, and this abnormal breathing indicated the diagnosis, the pains being referred from the over-tonic muscles

FIG. 1



Referred pain from ant scalene muscle Functional case

I shall refer to this case later under treatment As stated in my second lecture, the respiratory habit of functional disease is thoracic, whether in men or women Many cases showing this habit occurred during the war, and were discharged as neurasthenics

Thus a man, aged 26, who was discharged in May, 1919, as neurasthenia, dated his illness from bronchitis in 1915 and sunstroke in 1916 and 1917 His complaint was that three or four times in a week he woke with a start, sat up and struggled for breath There were no physical signs in the heart or lungs and there was entire absence of any epigastric protrusion on breathing Pressure on the triangularis sterni produced pain and sensation of strangling Instructions were given to remedy the defective action of the diaphragm A fortnight later he reported "better sleep and on only two nights was there any wheezing" He was instructed to continue, and in a further month reported "no attacks and good sleep," and the pain was not produced by pressure on the muscle formerly tender

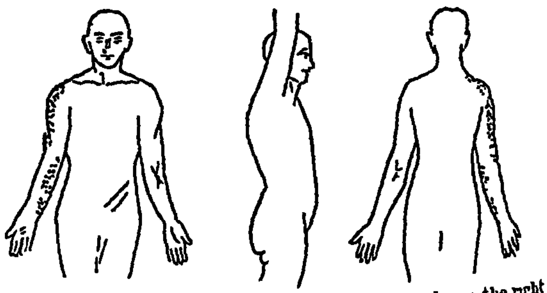
Another man discharged with D A H complained of rapid heart on exertion or excitement, with pain in the upper part of the chest The heart sounds were normal, the pulse 150 He again had lost diaphragmatic breathing, and the second intercostal space was markedly sensitive to pressure He was given similar instructions, and five weeks later Dr Wiltshire's note reads, "much better, pulse steady, 80 per minute" The heart had ceased to bother him 14 days after being first seen, and had only been troublesome on one occasion after having had two drinks with his father A further note nine months after his first visit stated that he was keeping well and his breathing was normal There were no pains in the chest

Gastric Pain —There is no need for me to do more than to remind you of the very large number of cases who complain of pain under the heart after food As I have indicated in my second lecture, these originate from a persistent tonic condition of the fourth or fifth intercostal muscle It is not clear why that part of the muscle which is in the nipple line should be most tender. This is the point at which the external intercostal muscle ends, for in the intercartilaginous space the place of this muscle is taken by fascia This point is also the apex of the inverted arch formed by the rib and costal cartilage, an arch which is more narrow and is therefore deeper than that of the other ribs

Pain of Pleurisy —Nor is it necessary to give details of the acute pain of pleurisy As I have stated, the muscles in the neighbourhood of a patch of pleurisy become tonically contracted Pain is accentuated by pressure on the tonic muscle Three points are, I think, worth mentioning First, when pleurisy is located near the lower part of the sternum the triangularis sterni is particularly concerned in fixation, is tonically contracted, and gives rise to pain appreciated behind the sternum I have seen three cases in which pain came on suddenly, as commonly occurs in pleurisy, in two cases pain was so acute as to cause the doctors to make a diagnosis of angina pectoris * The third was not so intense, and was thought to be due to pericarditis The second point is the frequency with which the onset of pleurisy at the base is accompanied by pain in the shoulder or arm* (Fig 2) The third point is that apical pleurisy is also frequently associated with pains of similar distribution * From the short description of muscle actions in pleurisy given in my second lecture, the origin of these pains in tonically contracted scalenes and upper intercostal muscles is readily appreciated I here show the distribution of the pain in the arm arising as in a case of basal pleurisy, and in a case of apical pleurisy Dr Greenop while resident at the City of London Hospital investigated the question of referred pain in pleurisy (chiefly of tuberculous origin) in 50 cases During the course of the attack pain was referred to the area over the shoulder in 32 cases—64 per cent This is one of the areas I have described referred from the scalenes and upper intercostal muscles In these 32 (1) pain was referred down the arm, as far as the wrist in two instances, (2) the pain was definitely accentuated by pressure on the scalenes in seven instances The pain of pleurisy seems to be more intense in an individual of thoracic type

Chest Pain on Exertion —Pains occurring on exertion are commonly intensified and often recognised by pressure either on the triangularis sterni or on the scalenes, and, or on the upper intercostals, and more frequently on the left side Thus a male infirmary patient, aged 56, who could not walk the length of the ward without getting pain in the sternal region, and being obliged to stand still, recognised his pain when the tonic triangularis sterni on the left side was pressed upon * Similarly, a chemist aged 56, whose limit had been generally a hundred yards, but on occasions a quarter of a mile, recognised the pain which caused him to stand still When the third left intercostal space was examined with the finger shortly after an attack, the pain was produced and followed the usual course across the chest and down the left arm

FIG 2.



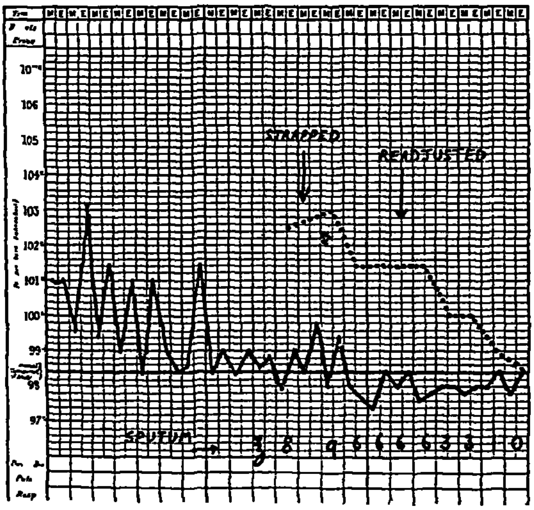
Area of referred pain from the ant scalene muscle on the right side From a case of pneumonia affecting the right lower lobe 36 hours after onset

With advancing age and diminished elasticity of the lung there is a greater liability to symptoms of stress owing to the accentuation of strain on the thoracic muscles As I stated in Lecture II, they are battling with an unyielding thorax, the result of calcification of rib cartilages In general, the more a man inclines to the thoracic type through life the more will he be affected by this stress in advancing years, and if he has a positive Wassermann reaction the earlier in life will such symptoms occur, by reason of the early calcification An apparent exception to this is seen in old people who give up thoracic breathing and rely on the diaphragm This occurs as the thorax becomes completely fixed, is a sign of giving up the contest, and is accompanied by an amelioration of the previous pain on exertion Much exertion is, however, impossible and he refrains, not on account of pain, but because "I cannot get my breath"

Dyspnœa —Turning now to dyspnœa, an important cause of shortness of breath, is an excessive

When applied in a case of pleurisy the spring is placed on the sound side On the affected side the belt should pass over the area where the intercostal muscle is most sensitive Its effect, when suitably adjusted, is to cause cessation of the spasm in the muscles controlling the ribs in the affected area. This is immediate, and should be the criterion as to adjustment. The persistent pain (but not that on coughing) begins to diminish forthwith, and has usually disappeared within ten minutes to half an hour I believe that this is an additional proof of my thesis that the pain is produced by a tonic contraction of the muscle Not only the intercostal, but the other muscles, such as the triangularis sterni and transversalis, cease to be tender, and the referred pain disappears At the same time the frictions are heard more distinctly This is explained by the fact that epigastric protrusion is induced or increased showing greater movement by the diaphragm The fact that this epigastric protrusion is induced when previously it was absent is strong evidence that pleurisy per se does not cause complete inhibition of the diaphragm I gave a full explanation in my second lecture It is a further advantage that, if desired, either a poultice or ice can be applied over the webbing of the belt

FIG 5.



Showing diminution in quantity of sputum as the result of lower thoracic constriction

Short of relieving the action of the muscle by the means indicated above, I feel sure that heat is the best local application whether by poultices, hot-water bottles, diathermy, or heating of dinner plates and holding them to the affected area, as was the habit of a patient with retrosternal pain prior to trying strapping.

The triangularis sterni has been mentioned before as being particularly liable to become tender, and pressure upon it produces pain in the lower sternal region, which is frequently recognised by the patient Assisting the action of the muscle is a rational method of treatment The part of the muscle which can be palpated is attached to the xiphisternum mesially, and to the back of the sixth rib laterally I propose to mention four types of case in which such a mechanism as a spring belt gives great relief

The first is the patient who wakes at night with retrosternal pain in the referred area of this muscle Whether this muscle is overtaxed as the result of a dream, or getting too low in the bed so that the spine is extended, I do not know However, the application of this belt at the level of the lower end of the sternum and xiphisternum relieves the pain at once, and these individuals do not forget to place the belt under the pillow on going to bed The second type is found in cases of severe colds with mild bronchitis of the larger tubes where low sternal pain develops Assisting the muscle relieves this pain The third type is caused by injury.

As an instance of this, I quote the case of a motor-lorry driver who, while starting his engine, suddenly felt something snap in his chest Pain developed instantly, of such severity that he could not move and believed that he was dying He was taken home and diagnosed as angina pectoris The diagnosis was, however, clear when bruise discoloration appeared in the fourth intercostal space Constriction at this level relieved him at once This accident is becoming more frequent.

The fourth type is well represented by the case of a doctor, aged 60, who developed pain if he walked 100 yards, and was advised to give up work on account of coronary artery sclerosis diagnosed from this retrosternal pain on exertion He has been wearing one of these belts for seven years, and now only occasionally gets pain, and carries on a big practice, largely on foot.

This method of restriction of the lower part of the chest will frequently also relieve pains arising from the upper part of the chest, and I believe it does so by inhibiting thoracic and promoting diaphragmatic expansion, and so diminishing the necessity for excessive thoracic respiration. For instance, in a case of tenderness arising from a tonic condition of the scalene,* promotion of abdominal respiration will relieve that tonic condition, at the same time it will cause the muscle to contract actively and so elevate the chest during inspiration * At first sight it appears to be a paradox that increasing the contraction of the muscle should relieve pain, but again I believe this supports the theory I have put forward that it is the tonic contraction without relaxation of muscle and not the intermittent active contraction which is the cause of the pain

There is a certain type of case which *develops pain* on exertion in the chest, neck or arm, in whom the heart is apparently sound The pains last for 18 months or two years, and then cease They may accompany the commencement of rise of blood pressure These are individuals who were mainly thoracic in type, and in the course of time are turning to diaphragmatic breathing They are usually between 50 and 60 years of age, a period during which many degenerative changes are taking place, one of importance being the onset of calcification of costal cartilages These are relieved by thoracic constriction* which has to be continued for 18 months to two years, and then with the disappearance of pain can be discarded

Posture

I have mentioned posture on hands and knees as a means to be adopted in children of promoting diaphragmatic contraction The converse occurs on extension of the spine which promotes thoracic movement In children of poor thoracic development who elevate the thorax in inspiration but do not contract the intercostal muscles, considerable improvement follows the adoption of a posture in which the thoracic spine is fully or over-extended for an hour twice a day It is most efficacious in those between 6 and 10 years of age

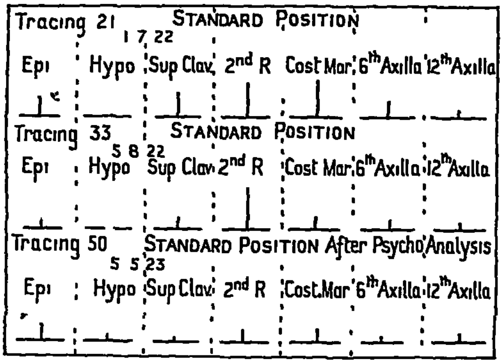
After pleurisy when the intercostal muscles on one side remain contracted, and there is a tendency to the production of a lateral spinal curvature, some considerable amelioration can be produced by making the individual lie on the sound side, the spine extended, and with a pillow or sandbag under the lower side This causes the upper (the affected side) to become convex, to open the intercostal spaces, and promotes contraction It may be painful for the first few efforts, but should be persisted in

CONCLUSION.

In conclusion, the negative result of a search of the literature has made me conclude that the mechanical side of respiration has not received the

I show you a slide of a patient to whom I referred formerly. She was first seen for pains in the arms and neck The first and second show you her type of breathing when first seen, which is nearly purely thoracic, and the third shows you the type of breathing after psycho-analysis by Dr Strauss Her neurosis was due to repressed fear The experience which frightened her was the falling of a bomb near her during an air raid The emotional component of the experience had undergone the process of repression The change in her general condition which followed this treatment, and the relief of pain arising from the upper respiratory muscles, was most remarkable (Fig 3)

FIG 3.



Effect of psycho analysis First and second tracings before, third after psycho-analysis In the latter the thoracic movement is markedly decreased

No case in which pleurisy or pericarditis have developed should be allowed to get up before he can produce a satisfactory protrusion of the abdomen, by whatever means procured * In children a return to the method of progression of their original progenitors—on hands and knees, is useful, but such means are not favoured by adults.

Not infrequently in clinical work we have to deal with a marked condition of this kind which may be termed " lazy diaphragm " It is apt to follow severe conditions of pleurisy, pericarditis, and abdominal operations I would remind you of the Japanese treatment for this condition of lazy diaphragm, which consists in inserting an exploratory needle into one of the lower intercostal spaces I have tried this method in two cases only, and with success In them shortness of breath persisted after operation It is quite possible that the axillary portion of the diaphragm can become overstretched and not be in a condition to react to a nervous impulse, and that a local stimulus of the nature of an exploratory needle promotes a contraction which is followed by a shortening of the fibres, and a suitable degree of stretch is reinstated

1 *To Promote Contraction of the Diaphragm* —In all except the most marked cases, thoracic breathing can be converted to diaphragmatic by simply depressing forcibly the lower ribs towards the pelvis (Fig 4) This procedure prevents the full thoracic mechanism coming into play, and so the diaphragm must perforce contract The muscle-fibres arising from these ribs are put under stretch For a permanent effect some mechanical means of holding these ribs depressed and preventing the recrudescence of the thoracic activity must be employed. Such method may be adopted alone or to assist voluntary efforts temporarily or permanently. I prefer the method of education rather than such mechanical assistance, but find mechanical assistance mentioned below essential in certain instances

Another example of the value of forcing the diaphragm to work by restricting the expansion of the chest is seen in persistent basal bronchitis I believe that a number of these cases persist because contraction of the dome of the diaphragm is insufficient to promote expansion of the lower lobes and thus to get sufficient air behind the mucus to dispel it

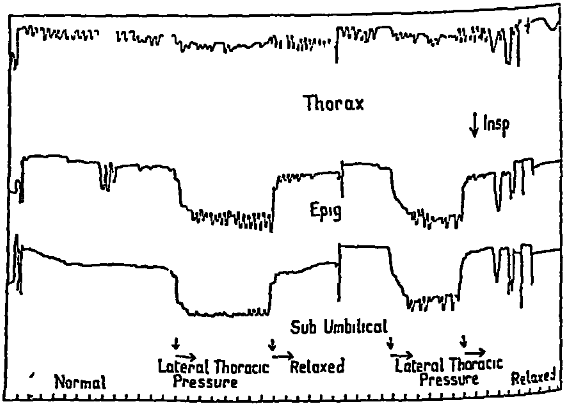
Fig 5 shows the diminution in the quantity of sputum as the result of lower thoracic constriction. This patient had had bronchitis for several weeks, he was admitted under my care, and as he had run the gamut of the usual expectorants was given an iron tonic This produced no amelioration The quantity of his sputum was measured, and a piece of strapping applied so as to constrict the lower thorax It was changed once to promote further constriction, and the slide shows a fall of temperature and the diminution of sputum which rapidly accompanied this treatment This mode of treatment is also useful in some cases of more chronic bronchitis.

As an example of this, I may quote the case of a retired army officer, aged 62, who, following influenza three years previously, had been expectorating about a coffee cup full of sputum daily in spite of going abroad during two winters. The sputum showed a pure infection of *B influenzæ* His type of breathing was rather markedly thoracic In ten days after lower thoracic restriction he had ceased to expectorate and his dyspnœa on exertion was much improved In the last 18 months he has not relapsed and wears the apparatus night and day

This is a useful method, both in adults and in children, for the latter a skein of wool may be employed

2 *To Relieve Stress on Muscle* —Under the second heading the effect of relief to the overtaxed muscle is striking in cases of pleurisy, but is valuable in other types of tonic muscles The old method of applying strapping seems largely to have fallen into abeyance, the reason for which is, I think, that any complete constriction of the chest is intolerable When applying strapping to a chest, and to be effective it has to be applied round the whole chest, the first thing that patients do is to try to take a deep breath, and when this is found to be impossible they become alarmed, and say they are being choked or strangled, and insist on being set free To obviate this I now use in all adult cases where restriction is employed a piece of webbing in the form of a belt, in the course of which is inserted a spring The objection is removed, for the patient can take a deep breath, and therefore does not experience those uncomfortable and terrifying sensations The permanent effect is, however, the same, and when the effort ceases the chest is restored to the required dimensions This belt also is of advantage because it can be readily varied, whereas strapping adjusted remains in position, and, further, tends to stretch a small amount, and therefore the constriction does not remain constant or as originally desired.

FIG 4



Effect of compressing lower thorax (*a*) on the upper thorax diminished movement, and (*b*) on the diaphragm, elevation of level of the abdomen and increased movement Functional case normal and characteristic of myxœdema. In Case 12, where the basal metabolic rate was only −3 per cent, it is to be noted that the patient was actually receiving thyroid extract when the estimation was carried out. A study of the table shows that no less than 18 of these cases suffered from menorrhagia as a symptom after the onset of myxœdema. In only four was menstruation regular and normal and in one instance a tendency to amenorrhœa was found. In this series therefore, 78 per cent of the patients in whom myxœdema developed before the natural menopause suffered from menorrhagia.

TABLE I.—*Myxœdema Developing before Natural Menopause*

Case	Age	Basal metabolic rate (per cent)	Menstruation since myxœdema	Natural menopause at—
1	48	−35	Menorrhagia	Not reached
2	39	−27·7	,,	,,
3	44	−30	,,	,,
4	49	−16·7	Normal	,,
5	48	−16	Menorrhagia	47 years
6	40	−37·5	,,	Not reached
7	40	−21·1	Normal	,,
8	49	−30	Menorrhagia	47 years
9	53	−22·8	,,	45 ,,
10	53	−16	,,	48 ,,
11	34	−40·8	Normal	Not reached
12	50	−3·3*	Menorrhagia	45 years
13	58	−16	,,	51 ,,
14	59	—	,,	50 ,,
15	53	−21	,,	51 ,,
16	43	—	,,	Not reached
17	40	−5	Normal	,,
18	56	−40	Menorrhagia	48 years
19	59	—	,,	45 ,,
20	60	—	,,	55 ,,
21	48	—	,,	Not reached
22	48	−26·6	,,	,,
23	36	−29·3	Delayed, irregular and scanty	,,

* On thyroid

Cases occurring after Natural Menopause

Table II shows a series of 15 cases of myxœdema developing after the natural menopause. The average age of the menopause in this group was 49½, and menstruation in all cases had previously been normal. The average period of time between the cessation of menstruation and the date at which these patients reported for treatment for myxœdema was 8½ years an interval which seems sufficient to justify the assertion that, in this series at any rate, the onset of myxœdema was not the cause of amenorrhœa; rather does it confirm the opinion which has frequently been expressed that myxœdema is a disease which tends to develop after the menopause and normal ovarian activity has ceased.

TABLE II.—*Myxœdema Developing after Natural Menopause*

Case	Age	Basal metabolic rate (per cent)	Menstruation before menopause	Menopause	
				Years previously—	At—
1	51	—	Regular and normal	4	47
2	56	−53·7		3	53
3	59	—		7	52
4	75	−21·8		25	50
5	56	−22·9		6	50
6	49	−26·7		2	47
7	51	−26·3		4	47
8	50	—		3	47
9	67	—		15	52
10	50	−15		3	47
11	60	−14·3		8	52
12	56	−11		6	50
13	70	−42		20	50
14	55	—		9	46
15	60	−35		10	50

Taking into consideration therefore, the 38 cases already quoted in Tables I and II, it appears that myxœdema develops before the natural menopause in rather less than two-thirds, and in the majority of these patients (78 per cent) it is accompanied by menorrhagia. In the remainder rather more than one-third, myxœdema develops after the natural menopause, and in this group menstruation previous to the menopause was quite normal.

Cases Occurring after Premature Menopause

Table III shows a series of three cases which cannot be grouped either in Table I or Table II, owing to the fact that the menopause occurred prematurely. The cases were all quite typical of myxœdema, and the basal metabolic rate was subnormal in all three, −35 per cent, −20·3 per cent, and −28 per cent. respectively. The onset of the disease however did not occur for many years after the menopause. In Case 1 the interval between the cessation of menstruation and the onset of symptoms of myxœdema was eight years in Case 2, 12½ years and in Case 3, 18½ years, so that here again it is extremely unlikely that the cessation of menstruation was in any way due to the thyroid disturbance which developed subsequently. In Case 3 the symptoms of myxœdema were first noticed 18 months after the removal of a retrosternal goitre. The goitre had been present for four years before operation was undertaken so that the interval between the menopause and the onset of thyroid symptoms in this case was 14½ years. The cause of the premature menopause in Case 3 was not discoverable, but in Case 1 it occurred after a stroke, and in Case 2 after pregnancy, menstruation appearing on one occasion only after the child had been born.

TABLE III.—*Myxœdema Developing after Premature Menopause*

Case	Age	Basal metabolic rate (per cent)	Menstruation before menopause	Menopause		Myxœdema for—
				Years previously—	At—	
1	45	−35	Regular	11*	34	3 years
2	52	−20·3	,,	14†	38	15 months
3	60	−28	,,	20	40	18 months‡

* Following stroke
† Following pregnancy (one period after and then stopped)
‡ Following thyroidectomy performed for retrosternal goitre which she had had for four years

Cases Occurring after Artificial Menopause

Table IV. shows a series of 15 cases in whom the artificial menopause had been induced either by surgical measures or X rays for menorrhagia. All these patients have since developed typical symptoms of myxœdema and are now under treatment with thyroid extract. The question that arises is whether the menorrhagia in these patients was an early symptom of myxœdema. Unfortunately, it is impossible to speak with any certainty as to the state of the pelvic organs at operation in all these patients as gynæcological treatment in the majority was undertaken some years ago and not at this hospital. Consequently, we have not been able to obtain detailed information as to the operative findings. But in none of the 15 cases was there any history of operation having been undertaken for the removal of fibroids or other organic disease of the pelvic organs. The story which we obtained was more or less the same in all cases. The patients had complained of menorrhagia for varying periods and had had the usual treatment with ergot mixtures iron tonics and rest in bed. None of them had had thyroid extract. When the condition did not respond to any of these measures operation was advised as affording the only means of relief. We have also added to this table three cases in whom an organic pelvic lesion, ovarian cyst or fibroid or both, was known to have been present. All three patients were operated upon and the typical symptoms of myxœdema have since developed attention it deserves. Investigations during the last half century have been concerned rather with what may be called the chemical side Recent advances in our knowledge of the muscle reaction to stretch and postural tone have introduced new conceptions, some of which I have attempted to apply to the muscles concerned in respiration

By adopting the orthograde position man has, to some extent, altered the mode of action of his respiratory muscles In animals the mechanical act of respiration is carried out almost entirely by the diaphragm, the bony thorax being more concerned with the support of the weight of the body and forming a case for the lungs than with expansion of the latter In man, though the diaphragm remains the chief agent, the thorax is freed from its weight-supporting function and helps expansion.

Under certain circumstances which I have described, too great a part of the work of expanding the lungs is transferred to the thorax This involves abnormal work by some of the thoracic muscles, a response which is ontogenetically unnatural to them and which qua muscle circulation and general energy is uneconomical Within limits they function without complaint, but with greater stimuli they are driven into conditions of persistent and excessive tonus These unnatural actions acquired comparatively recently cause symptoms, thus following the usual law Their protest takes the form of pain and distress These symptoms can be relieved by the removal of the source of the stimulus, or by relieving the stress on the muscle by mechanical means

Considering the general importance of the orthograde habit as an original cause of these troubles, and the influence of increased emotional development, we are forced to conclude that to a large extent these symptoms are among the penalties man pays for his advances over the lower animals

I have to acknowledge my indebtedness to Dr Wiltshire for helping me compose these lectures, and to the Medical Research Council for a grant in 1919 towards the recording apparatus

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MENORRHAGIA AS A SYMPTOM OF MYXŒDEMA.

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AND

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THE frequency of menorrhagia as a symptom of myxœdema is now quite generally recognised by those who have studied myxœdema from the clinical aspect, but it has scarcely received sufficient attention in the text-books of gynæcology In the present instance we have analysed the menstrual histories of 59 cases of myxœdema seen by us during the past five years. The results show quite clearly that when myxœdema develops before the menopause it is usually accompanied by menorrhagia On the other hand, a considerable proportion of patients develop this disease *after* the menopause, either natural or artificially induced, and this may account for the impression that it is often accompanied by amenorrhœa

Summary of the Literature.

The following are the main facts which we have extracted from the literature bearing on this subject Most text-books of gynæcology state that myxœdema is accompanied by amenorrhœa, but Eden and Lockyer (1920) discuss the subject more fully and conclude that in the present state of our knowledge the relation of thyroid activity to uterine hæmorrhage cannot be defined. They point out that menorrhagia, without a recognisable local cause, is sometimes seen in women *suffering from myxœdema*, but that amenorrhœa is also found The occurrence of menorrhagia in myxœdema was first reported in 1893 by three separate observers, Allen Starr, Kirk, and Schotten, quoted by Meyers and Falta Later Murray (1908) pointed out that although menorrhagia occurred during the early stages of myxœdema in some cases, amenorrhœa was more commonly found Sehrt (1913), quoted by Novak, reported a series of 55 cases of functional hæmorrhage In 38 of these cases there were definite indications of hypothyroidism Hertoge (1915) suggested *that the profuse* menstruation of thyroid-deficient women was due to infiltration of the uterine muscle and mucosa and to diminished coagulability of the blood He also pointed out that the higher the degree of thyroid defect the greater was the menstrual loss McCarrison (1918) was *also* of the opinion that menorrhagia is a sign of thyroid deficiency and that it is the rule when thyroid defect arises in later life, the menstrual period being prolonged and the intervening time shortened Finally, Israel Bram (1924), in his book on goitre, summed up the *existing evidence* and *gave* it as his opinion that though menstruation in thyroid deficiency is often regular in rhythm, it is usually excessive and characterised by menorrhagia The association of menorrhagia with thyroid deficiency has, therefore, been frequently described

Cases occurring before Natural Menopause

Table I shows a series of 23 cases in whom myxœdema developed before the natural menopause The average age of the menopause in women in this country is, of course, variable but it is generally taken as occurring between the ages of 45 and 52 In half the cases of this group the patients had not reached the menopause when seen by us for the first time In the remainder the history showed that the menopause had occurred at the average age (the average *for the* 11 cases was 48½), and had been preceded by menorrhagia, generally of two or three years' duration The basal metabolic rate was estimated in the majority of these patients and in all those so examined it was considerably below the

Indications for Treatment at Various Stages.

At a very early stage of the disease—that is to say, within the first few weeks of the recognition of the attack—the most important indication by far is to place the paralysed muscles at complete rest. Further, they must be rested in a position of complete relaxation The most effective splint for this purpose is a plaster bed, which consists, really, of a suitably-padded plaster case in which the patient lies completely immobilised This not only affords the best possible prospect of recovery of function in the injured muscles, but also minimises the pain which is not infrequently quite considerable at this stage

Complete physiological rest of the affected muscles is at this stage incomparably more valuable than massage, movements or electricity. Indeed, it is generally unwise to employ these measures at this stage Even at a later date, electricity is far less valuable than is often imagined If it were necessary to choose between efficient splintage and electricity, the choice should undoubtedly fall in all cases upon splints Electricity is at best but a poor substitute for the natural stimulation of the paralysed muscles and the greatest care and skill must be employed in its application; in particular, care must be taken that only the paralysed muscles are stimulated to contract and that the current does not overflow into the opposing and probably normal muscles, or else the effect produced will be the exact opposite of that which is desired—viz, the opposing muscles will be strengthened whilst the paralysed muscles will be still further weakened by the strain to which they are subjected Again, care has to be taken not to make the weakened muscles work against an over-great resistance lest they should be exhausted, and they must not be exercised to the point of fatigue; the object is to strengthen them and not to weary them It is unwise, in my experience, to prolong the systematic use of electricity for more than a year As a rule young patients become rather current-shy by the end of this time and a certain amount of voluntary power will then have returned in muscles destined to recover, on the other hand, if the muscles are not going to recover, no good will come from further prolongation of the electrical treatment As soon as a certain amount of voluntary power has returned in the paralysed muscles, voluntary movements performed by the patient himself, manually assisted if necessary, will be quite as effective as electrical stimulation and probably better.

The gist of this is that electrical stimulation is a valuable aid at a certain stage and so long as it is suitably carried out; but it is always to be regarded as an adjunct to treatment The promiscuous use of a faradic battery by ignorant parents and others is to be whole-heartedly condemned

Cause of Contractures

The contractures that take place in infantile paralysis are due to two causes—viz, the unbalanced action of the muscles and the effect of gravity. For example if the extensor muscles on the front of the leg are paralysed and the calf muscles are not, the latter muscles will pull the heel up and the foot down and the deformity known as talipes equinus will result Gravity aids in the production of this deformity, because the natural tendency of the foot, if unsupported by the extensor muscles, is to drop down by its own weight. It is of prime importance to prevent this equinus developing, not only because it renders walking difficult and a subsequent tenotomy for its relief necessary, but also because it takes away practically all hope of recovery in the damaged extensor muscles

I cannot emphasise too strongly the importance of always protecting the paralysed muscles from over-stretching, which is the first and most fundamental law of successful treatment. If it were only appreciated more widely, the sum total disability from infantile paralysis would be approximately halved. It is still quite a common experience to see children in orthopædic clinics who have been treated with electricity and perhaps massage for several years, but have never had a splint applied from the very onset of their disease. In infants, and in quite early stages of paralysis in older children, night-splints only will be needed, but when the power of walking begins to return it will probably be necessary to provide a day-splint as well, designed to assist the action of the weakened muscles Incidentally, it may be remarked that the most striking deformities are produced when certain muscle-groups are only affected; if one muscle pulls and its opponent does not pull, the foot will obviously be dragged out of its normal position, whereas if all the muscles of a limb are more or less equally paralysed no gross deformity will ensue, though the limb may be practically flail.

Indications for Operation

In considering the advisability of operation one of the first questions will be. *At what age should it be undertaken?* Much depends, of course, upon the nature of the operation that is contemplated, but it may be stated as a generalisation that it is unwise to perform any sort of operation within about three years of the onset of the attack. Usually, if treatment has been adequate in the meantime, no operation is necessary at such an early date, but the main point is that recovery may still take place, in greater or less degree, within this period; generally, of course, the greatest amount of recovery takes place in the early months following the onset, but it goes on more slowly for many months afterwards and in some cases seems to appear quite unexpectedly after months of apparent failure of response to treatment It can hardly be said, therefore, within three years of the onset, what the ultimate paralysis is going to be, and many surgeons would defer the decision until five years or even later. The only operation that should be performed, in my opinion, within this period, is simple tenotomy—usually tenotomy of the tendo Achillis In cases in which a proper rectangular night-splint has not been applied, an equinus deformity may appear, and this renders walking very difficult and greatly decreases the prospect of recovery of the affected extensor muscles; in such cases the calf-muscles soon undergo contracture, and when this has occurred it is unsatisfactory to attempt to stretch them again by splintage and the most practical way of treating the condition is to perform tenotomy of the tendo Achillis In several of these cases, in which there has not been the least response to efficient treatment whilst the equinus persisted I have obtained practically complete recovery after relaxing the extensor muscles by performing tenotomy.

At a later stage the question of an operation may be considered from various points of view · (1) We can never create power, for those muscle-fibres that have been destroyed by the disease are permanently destroyed, and the utmost that conservative treatment can achieve is the development of the fibres that remain. Such power as is gone is gone for ever. But where the damage has been unbalanced in its distribution we can sometimes redistribute the power, with resulting improvement in function. (2) If the muscles controlling a joint have been so extensively damaged that the joint is practically "flail," that joint becomes a hindrance instead of a help, and the patient would be better without it (3) An operation may enable the patient to dispense with the use of apparatus, or at any rate to get along with an instrument which is cheaper, less cumbrous, and less expensive than formerly (4) In neglected cases considerable contractures often appear and serious mechanical disability is then invariably added to that which results from the paralysis per se. A judicious correction of the mechanical disability by division of contracted muscles, ligaments, joint capsules, &c will then substantially improve function We will consider each of these headings in turn.

TABLE IV.—*Myxœdema Developing after Artificial Menopause.*

Case	Present age	Type of operation	Age at operation	Operation for—	Alteration in weight since operation	Present condition—B M R or sugar tolerance
1	47	Double ovariotomy, hysterectomy	42	Menorrhagia for three years	+1 st 11 lb	Typical myxœdema
2	58	Hysterectomy	47	Menorrhagia for two years	−2 st	B M R −16 per cent
3	50	Double ovariotomy	23	Menorrhagia	Obesity + +.	B M R −3 per cent; taking thyroid
4	52	Hysterectomy.	45	Floodings for four years	+3 st	B M R.−19 4 per cent
5	50	Double ovariotomy, hysterectomy	47	Menorrhagia for five years	Obesity +	Sugar tolerance decreased
6	53	Hysterectomy	49	Floodings for nine years	+1 st 7 lb	Sugar tolerance decreased, goitre present
7	39	Double ovariotomy, hysterectomy	34	Floodings	—	B M R.−27 7 per cent, sugar tolerance decreased
8	58	Hysterectomy Hemithyroidectomy	47 38	Menorrhagia	—	B M R −16 6 per cent
9	56	Sterilisation by X ray	?	„	—	B M R −40 per cent
10	59	Hysterectomy	40	„	Obesity + +	Typical myxœdema
11	57	Double ovariotomy	44	Floodings	+2 st 3 lb	„ „
12	27	„ „	26	Menorrhagia	+3 st 2 lb	„ „
13	52	Double ovariotomy, hysterectomy	48	„	+1 st.	„ „
14	41	Double ovariotomy, hysterectomy	38	„	?	Myxœdema with goitre since operation
15	33	Hysterectomy	33	„	?	Goitre B M R −24 4 per cent, sugar tolerance decreased
16*	41	Double ovariotomy (ovarian cyst)	33	„	+2 st 7 lb	Typical myxœdema
17*	53	Ovariotomy, hysterectomy (for cystic ovary + fibroid)	50	Floodings	+½ st	B M R −21 1 per cent, sugar tolerance decreased
18*	57	Double ovariotomy hysterectomy (fibroid)	50	„	+2 st 4 lb	Typical myxœdema

* With additional ovarian cyst or fibroid.

In the majority of the patients of this group the basal metabolic rate was estimated and found to be considerably below the normal The results are given in Table IV In the others this examination could not be made, but the typical symptoms of myxœdema were present in all Four of the patients showed the typical decrease in sugar tolerance which we, in association with P C Brett, have already reported as a characteristic change in myxœdema Taking into consideration the facts which we have already quoted in Table I, it has seemed probable to us that in some of the patients of this group (Table IV) at any rate the menorrhagia which occurred before operation was an early symptom of myxœdema This suggestion is supported to some extent by the subsequent development of characteristic symptoms of myxœdema in all In the absence, however, of more accurate information as to the condition of these patients before operation, this view can only be regarded as hypothetical Nevertheless, the cases reported in Table I do show that in this series a very definite proportion of women suffering with menorrhagia are the subjects of some degree of hypothyroidism And what we particularly wish to emphasise as a result of these observations is that where pelvic examination reveals no abnormality, the possibility of thyroid deficiency should always be raised. Investigation of the basal metabolic rate is useful in this connexion

Summary and Conclusion

As a result of the analysis of the menstrual history of 59 cases of myxœdema the following conclusions have been reached (1) In our series of cases myxœdema developed before the natural menopause in 56 per cent and after the menopause in 44 per cent (2) When myxœdema developed before the natural menopause menorrhagia was present in 78 per cent of cases (3) Myxœdema is a common sequel to the artificial menopause when the latter has been induced for menorrhagia without apparent local cause Fifteen cases have been quoted in this paper The probability is that the menorrhagia, in some of these patients at any rate, was an early symptom of myxœdema

In conclusion, we wish to express our thanks for the help which Prof H MacLean has extended to us, and to the Medical Research Council for defraying expenses for this investigation

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THE POSSIBILITIES OF OPERATION IN INFANTILE PARALYSIS.

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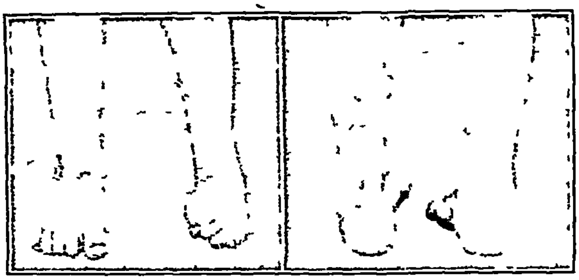
CASES of infantile paralysis are not of everyday occurrence in general practice, and it would be unreasonable to expect the average family doctor to possess a full and critical knowledge of all the operations that have been devised for the relief of this condition But it is most emphatically the duty of every practitioner to know what can and cannot be achieved by various methods of treatment, and especially by operative treatment, so that his patients may not endure any unnecessary suffering In other words, he should know enough about present-day practice in the treatment of infantile paralysis to be able to give his patient the benefit of the most modern forms of treatment Furthermore, he must be sufficiently skilled in the management of the case in its non-operative stage, to prevent any avoidable increase of disability, in particular he must not allow any contracture of the paralysed limbs and must avoid any increase of the existing paralysis from overstretching of the paralysed muscles The main object of this paper is to indicate what expert orthopædic surgery can offer for the relief of certain types of paralytic cases and to avoid details of interest only to the actual operator vehicles, and so on Many surgeons, therefore, think that it is better to provide a hinged instrument which can be locked at will.

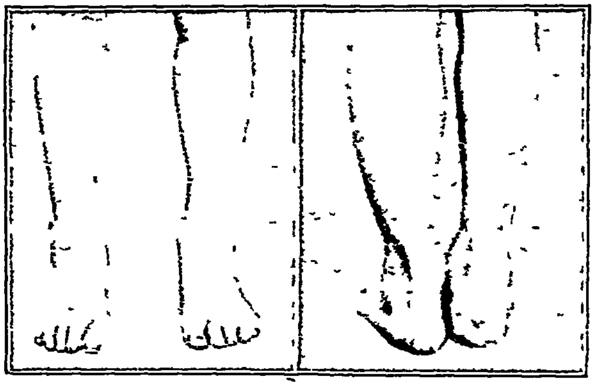
The shoulder, however, when paralysed, provides an ideal opportunity for the performance of arthrodesis As a rule, when the deltoid is paralysed the rest of the limb is fairly serviceable, but as the shoulder-joint forms a loose and-uncontrollable link between the upper extremity and the trunk, the arm, though it may be perfectly good in itself, is rendered functionally useless By ankylosing the arm at right angles to the glenoid cavity an enormous improvement is immediately obtained, for the patient is able to move the upper limb with the scapula to quite a useful extent by means of the scapular muscles

FIG 3 A



Before operation.

FIG 3 B



After operation

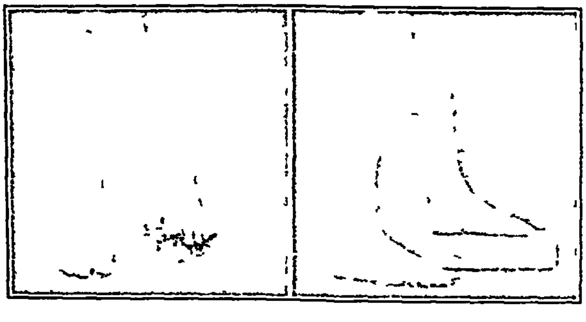
Another tendon transplantation, before and after operation

In the case of flail foot and of feet which are too severely paralysed to be amenable to treatment by means of tendon-transplantation, arthrodesis is now becoming largely replaced by the more modern stabilisation operations For the most part these consist in a combination of partial arthrodesis with mechanical rearrangement of the foot so as to render it a firmer basis upon which to balance the body-weight when walking For instance, the fore-part of the foot may be shortened by removing bone, so that the anterior pillar and the posterior pillar, as seen from the side, are more nearly equal in length and approximate more closely the form of an equilateral triangle A common method nowadays is to ankylose the subastragaloid and the mediotarsal joints and to leave the ankle-joint untouched Even though the muscles of the leg be completely paralysed it is still possible for the patient to balance upon the ankle-joint, much as a person balances on the ankle-joint of an artificial limb , and this method gives a much more elegant gait than does the older operation of panarthrodesis The operation which I prefer to all others for the stabilisation of a flail foot or a much paralysed foot consists in a combination of the methods introduced by Naughton Dunn and Hoke By this method a stable foot can be produced in practically any case of advanced paralysis of the muscles of the leg and with simultaneous rectification of any gross deformity that may have crept in in the course of years Of course, if shortening is present that persists, but patients always regard it as the greatest boon to be able to get rid of their leg-irons and to have to wear only a high boot or shoe which indeed may hardly attract attention if the shortening be moderate and capable of being compensated by a cork inlay inside the footwear

Even in cases where there is considerable paralysis of the thigh, in addition to a flail foot it is still worth while to perform a stabilisation operation for the flail foot because this rids the patient of the preponderating factor in the instability of his limb, and his gait becomes proportionately improved , further he can often use a light knee-cage instead of a heavy double instrument reaching from the ground to the thigh, and in any case the cure of the drop-foot usually results in a great saving of expense in respect of surgical boots Fig 4 shows a very interesting case of infantile paralysis treated by arthrodesis

Arthrodesis and stabilisation operations depend for their success upon sound bony fusion between the bared bone surfaces, and are, therefore, best performed when the tarsal bones are fairly well ossified , they can be carried out successfully at 9 years, but it is better whenever possible, to postpone the operation until a few years later. In other words, cases of flail foot and severely paralysed foot are best treated by instruments, as a rule, until they are 10 to 12 years of age, when a Dunn-Hoke or some similar operation can be carried out with very great advantage These patients appreciate enormously the knowledge that when once this operation has been carried out their foot has been stabilised once for all and that it can never get out of shape again, and that they have henceforward only to concern themselves from time to time with the provision of a new boot with a concealed inlay Knowing that they will not be liable for the future to have to enter hospital again from time to time and that if they get a wage-earning post they will be able to keep it, these patients find their outlook on life wholly altered and they gladly seek remunerative occupations

FIG. 4



A stabilisation operation

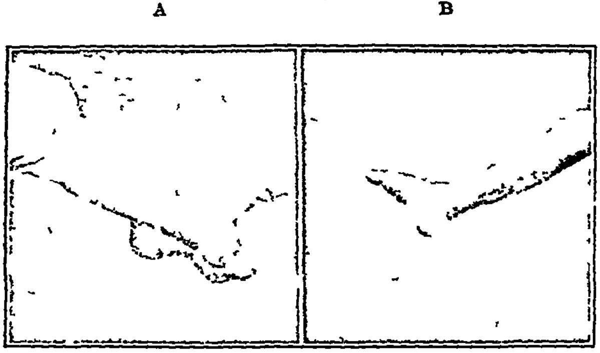
Myotomies and Capsulotomies

In neglected cases, when the proper use of splints has been lacking, contractures often occur, and a considerable mechanical disability is added to that which has already been produced by the paralysis itself For example if a calliper is outgrown the knee will flex and this will result secondarily, in a flexion at the hip-joint in order to maintain the erect attitude In some cases it is even found that patients have been kept in bed for unnecessarily long periods and the use

Tendon Transplantation.

If one important muscle is seriously paralysed, and another good muscle of similar action is available and can be spared from its present position and function its tendon may be detached from its present insertion and transferred to that of the paralysed muscle This is the fundamental principle of tendon transplantation Generally speaking, it may be taken as axiomatic that the tendon to be transplanted should be that of a muscle of homologous group—that is to say, that a flexor tendon should be transplanted into a flexor and an extensor into an extensor, and not vice versa Further, the surgeon has to beware of the obvious fallacy of " robbing Peter to pay Paul ", a tendon must only be transplanted if its function can be substituted, in greater or less degree, by some means or other, and if it is going to subserve a more important function in its new position than it did in its normal one Lastly, it is obviously useless to transplant a tendon unless the muscle belonging to it is of adequate power, if it cannot do its work efficiently in its new position it is much better to treat the case by instruments or some other means For example, if all the muscles of a leg have suffered severely and none of them retain much power, it is not much good to perform transplantation, even though one group be rather more powerful than another which it is desired to reinforce It must be borne in mind, too, that it is not enough for a transplant to be capable of effecting a certain movement of a bare foot resting upon a pillow What it has to do is to effect the movement when the limb is carrying the body-weight, which is a very different proposition, and in many instances it is a question of carrying, not only the body-weight, but also the weight of a high boot, which may be considerable I can recall several cases where this important practical point was overlooked and a tendon-transplantation which looked perfectly satisfactory when the patient lay in bed was found to be perfectly unsatisfactory in practice

FIG 1.



A, Paralytic talipes calcaneo valgus Gastrocnemii and soleus seen, at operation, to be totally destroyed

B, Result of tendon-transplantation

The ideal case, then, for tendon-transplantation is that in which one important muscle-group is severely paralysed, a fair amount of power remaining in the limb generally, and another sufficiently homologous muscle is available for the substitution of the damaged one

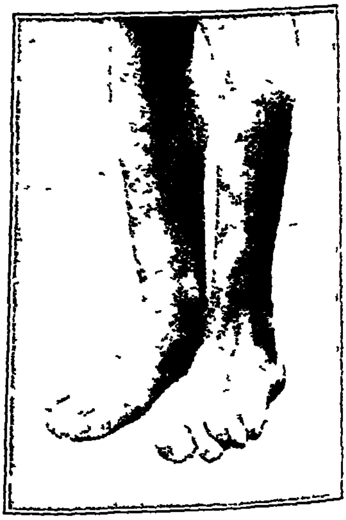
Two good examples of helpful tendon transplantation are (*a*) the substitution of a paralysed calf-muscle by the use of the peronei and toe-flexors Fig 1 shows a patient in whom the calf-muscles were found at operation to be totally destroyed, consisting of a mere tissue of white fat and fibrous material, tendon transplantation was performed and the second photograph shows the result The patient was able to walk about, run, and stand on tip-toe without instrumental assistance (*b*) The substitution of paralysed tibiales (which results in the production of a very disabling paralytic valgus) by the use of both long extensors of the toes; it is true that a certain amount of power of extension of the ankle-joint is lost by this means, but it is not entirely lost and extension of the toes can still be performed by the extensor brevis If a choice has to be made of the lesser of two evils, it is found in practice to be far better to sacrifice a slight amount of extension in order to be cured of a painful and unsightly valgus.

One of the most successful of the simpler transplants is that of the tibialis anticus to the outer border of the foot for the relief of peroneal paralysis, this operation is valuable in Friedreich's paralysis and various other nerve lesions, as well as in infantile paralysis (Fig 2)

Many other examples of tendon-transplantation might be given, but the above will suffice to illustrate its usefulness (Fig 3)

One particular transplantation may be mentioned, however, because, though it seems to be opposed to theoretical principles, it nevertheless gives satisfactory results This is the transplantation of the biceps cruris to assist the action of a weakened quadriceps This is an example of a heterotype transplantation—that is to say, it consists in the substitution of an extensor by a flexor muscle But in some cases in which the quadriceps is just too weak for its work, and there is a slight amount of instability of the knee it is found that the reinforcement of the quadriceps by carrying forward the biceps muscle and tendon gives just that slight increase in power which is sufficient to stabilise the joint In suitably selected cases this operation may enable the patient to dispense with an unsightly and expensive splint, reaching to the groin, or, in hospital cases, to get rid of an awkward calliper splint

FIG 2



Tibialis anticus transplanted to outer side of foot (Useful in many forms of talipes varus one of the most efficient of transplantations) The case shown is one of Friedreich's disease

Stabilisation Operations

When a joint is wholly uncontrollable it is clearly a nuisance. It can be stabilised in one of two ways—viz , either (*a*) by the use of an instrument furnished with a hinge which can be locked at will, or (*b*) by removing the articular cartilages by operation and producing a bony ankylosis instead of a joint This type of operation is known as an arthrodesis In many cases of infantile paralysis it is very valuable For example, in the case of a flail foot there are quite a number of uncontrollable joints—viz , the ankle-joint, the subastragaloid joint, and the mediotarsal joint To control such a flail foot it is necessary for the patient permanently to wear an instrument consisting of double steels reaching to the knee or else to have the joints fixed by operation This results in rather a " clumping " walk, but many patients much prefer this to the permanent wearing of a heavy, clumsy, expensive, and unsightly apparatus A flail knee also, can easily be stabilised by the performance of arthrodesis, but it is a debatable question whether this operation is preferable to the use of a knee-cage, for though an arthrodesis may deliver the patient from the wearing of an apparatus, it leaves him with a very awkward limb which gets greatly in the way in public vehicles, and so on Many surgeons, therefore, think that it is better to provide a hinged instrument which can be locked at will

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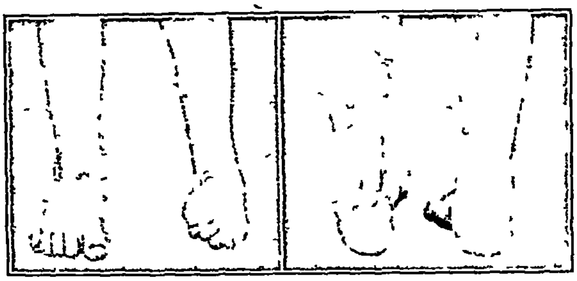
FIG 3 A



Another tendon transplantation, before and after operation

Before operation

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FIG 3 B

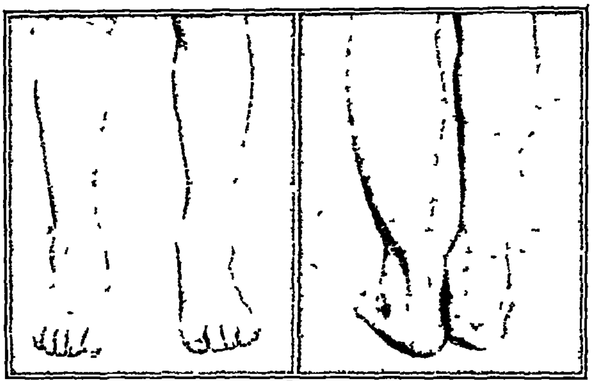

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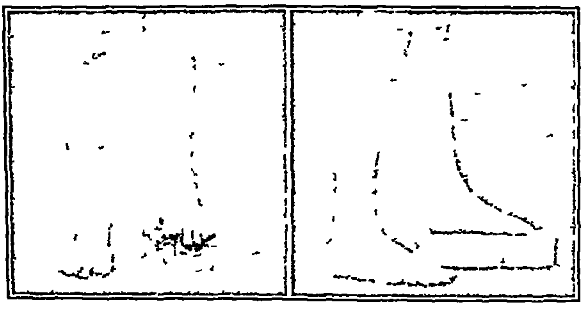
FIG 4



A stabilisation operation

Myotomies and Capsulotomies

In neglected cases, when the proper use of splints has been lacking, contractures often occur, and a considerable mechanical disability is added to that which has already been produced by the paralysis itself For example, if a calliper is outgrown the knee will flex and this will result, secondarily, in a flexion at the hip-joint in order to maintain the erect attitude In some cases it is even found that patients have been kept in bed for unnecessarily long periods and the use of pillows beneath the knees and behind the shoulders has resulted in the production of flexion at both these joints All the structures upon the concavity of the joint become contractured, not only the muscles The latter can be easily stretched by means of weight extensions, but joint-capsules are made of very tough white fibrous tissue and are very resistant to the stretching process and very liable to relapse as soon as the weight is removed A much more rapid and much more workmanlike method than stretching is the open division of all the resisting structures, including the joint-capsule This method, not being prone to relapse, is to be preferred in all cases, and especially in those cases of relapse due to parental neglect, since the result is much more likely to be permanent than is the result of temporary weight-extension The method is particularly applicable in the case of contracture at the knee, but can also be applied in the case of other joints—e.g, the hip and the elbow At the hip it is usually necessary to divide all the muscles upon the front of the hip-joint and the anterior part of the capsule of the hip-joint itself, avoiding only the anterior crural nerve and the great vessels In cases of extreme deformity it is often necessary to correct the faulty position of the limb by stages It is easy to obtain sufficient lengthening of the muscles, ligaments, and joint-capsule at one sitting, but there would be danger to the nerve-supply and circulation of the limb if the contracture were corrected at once, it may be necessary, therefore, after division of all possible structures, to bring the limb down to a certain extent only and to fix it there in plaster for a few weeks before undertaking a further correction. By proceeding in this way even the severest cases of neglected deformities can, as a rule, be remedied, including those distressing examples of four-footed progression

Amputation

Amputation is very seldom required nowadays in infantile paralysis The fact that a whole limb is totally flail is no justification for amputation, for, as Murhead Little pointed out, the last state may well be worse than the first if the patient is left with a stump which he is wholly unable to control and which is utterly different in use from the strong and perfectly controllable stump that carries the artificial limb in any ordinary case of amputation for trauma

It is well to remember that any patient can be made to walk somehow—perhaps not well, but still to walk—provided that he has one good buttock; even though one limb be totally flail and the other be severely paralysed he can still be made to walk after a style Only when both buttock muscles are completely paralysed and the legs are disconnected, so to speak, from the trunk is a patient incapable of being made to walk with the aid of instruments and operation Flail paralysis, per se, is not an indication for amputation Neither is the presence of severe contracture, for this can be remedied by capsulotomy, combined, if necessary, with arthrodesis or some other method of stabilisation Practically speaking, the principal indication for amputation in infantile paralysis to-day is the presence of inveterate ulceration of the affected limb Even so, every method of conservative treatment should have been exhausted and the capacity of the patient to control an artificial limb if amputation is performed should be most thoroughly considered before the operation is advised

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W H LANGLEY MEMORIAL PRIZE —Applications are invited for the prize founded in memory of Dr W H Langley, C M.G, principal medical officer of Southern Nigeria The prize, which is of the value of £30, may be awarded triennially to an officer of the West African Medical Staff, whether on the active or retired list, for the best paper on (*a*) tropical medicine or surgery, (*b*) tropical hygiene and sanitation, or (*c*) tropical entomology and parasitology The award is made by a committee nominated by the London School of Hygiene and Tropical Medicine, Malet-street, W C 1, and papers should be sent in before Oct 1st Further particulars may be had from the Secretary of the school.

SUPPURATIVE THYROIDITIS.

REPORT OF TWO CASES

BY LAMBERT ROGERS, F.R C S EDIN,
ASSISTANT IN THE SURGICAL UNIT, THE WELSH NATIONAL SCHOOL OF MEDICINE, THE ROYAL INFIRMARY, CARDIFF

ALTHOUGH a rare condition, suppurative thyroiditis occurs in both sexes and at all ages It is most frequently seen, however, in adult women and may arise either in a previously normal thyroid or in a goitrous gland Continental writers distinguish inflammation of a previously healthy thyroid from inflammation of a goitrous gland by the terms thyroiditis and strumitis, and so speak of either suppurative thyroiditis or suppurative strumitis, but this distinction is not as a rule made by English writers Not all inflammatory conditions of the thyroid go on to suppuration.

As a rule there is not much difficulty in diagnosis. Following an acute specific fever, or an attack of boils, a swelling appears in the region of the thyroid, the overlying skin becomes hot and reddened, and the temperature and pulse-rate increase. The signs and symptoms of thyrotoxicosis may arise but if extensive destruction of the gland occurs these may be replaced (later) by those of hypothyroidism One or both lobes of the gland may be affected

The condition is very painful because of the numerous coverings of fascia which prevent rapid distension of the gland It will be remembered that between the capsule of the thyroid gland and the skin there are no less than five layers of fascia—the pretracheal sheath, the double layer of fascia enclosing the omohyoid muscles, the vaginal layer encasing the sternomastoids and further back the trapezius muscles, and the superficial fascia with the platysma Inflammatory adhesions produced between these layers of fascia may mask the fact that the swelling is in the thyroid gland, by preventing the usual up and down movement with deglutition, a movement which normally depends upon the fact that the pretracheal tube of fascia which encloses the gullet, the trachea and the thyroid, moves freely inside the omohyoid fascia The intrafascial tension may give rise to dyspnœa and dysphagia

Kocher (1878) was the first to point out that acute thyroiditis was due to metastasis of an infective agent elsewhere in the organism.

Pathogenesis.

Thyroiditis may arise —

1. By direct infection, the result of penetrating wounds of the thyroid gland These cases are apparently rare

2 By contiguity. The infection spreads from a focus in the vicinity as in the following —

A railway porter, aged 31, complained of a painful swelling of his neck His past health had been good but he had recently suffered from boils and examination revealed one just above the left sternoclavicular articulation The left lobe of the thyroid was enlarged and tender, the skin over it red, hot, and fluctuant, and his temperature 100° F A diagnosis of suppurative thyroiditis was made and under ether anæsthesia the left lobe incised and drained. Several ounces of yellow pus escaped For some months afterwards a sinus existed but this ultimately healed

3 By the blood stream This method of infection is illustrated by the following case —

A housemaid, aged 48, was admitted to a medical ward under the care of Prof A M Kennedy because of general weakness following influenza She had suffered from a toxic goitre for many years, and the left lobe of the thyroid had been larger than the right, but about the time of admission both lobes had begun to enlarge She developed acute pain in the neck and slight dyspnœa. Examination showed that the lower part of the neck was much swollen (see Fig) The skin over the thyroid gland was hot, reddened, and tender There was no movement of the swelling on deglutition A radiogram showed very marked displacement of the trachea to the right Suppurative thyroiditis was diagnosed and under gas and oxygen anæsthesia 10 oz of pus were evacuated from the thyroid

Influenza, as in this last case, is liable to give rise to suppurative thyroiditis; other causes of a hæmatogenous infection are scarlet fever, typhoid or puerperal fevers, pneumonia, tonsillitis, gastro-enteritis, cholera, dysentery, measles, malaria, acute rheumatism, and mumps. Thyroiditis due to rheumatism, malaria or measles however, does not, as a rule, proceed to suppuration, while that following influenza or typhoid, scarlet or puerperal fever, frequently does.

Bacteriology.

The organisms commonly found in the pus are staphylococci or streptococci, or the *Bacillus coli*, but paratyphoid A and B infections have been recorded by French writers. The organism in the postinfluenzal case reported here was a Gram-positive diplococcus of a chain-forming type, which produced colonies resembling those of the streptococcus. De Quervain believes that suppuration more often follows infection of thyroids containing goitrous nodules than of previously healthy or diffusely hypertrophied glands. He also draws attention to the important fact that chronic suppurative thyroiditis, whether starting in a healthy or diseased gland, is nearly always tuberculous.

Treatment.

The treatment of acute suppurative thyroiditis, like that of suppuration elsewhere, is evacuation of the purulent contents and drainage. André Crotti relates the story of the distinguished surgeon, P. Franck, who when a small boy suffered from suppurative thyroiditis from which he nearly lost his life, "because the best physician in the district pompously declared that the child had ruptured a nerve in his neck and that death was imminent." Franck's mother, however, thinking that the swelling in her son's neck had something to do with his choking, called in a barber and told him to incise the swelling with his razor. Immediately a great quantity of pus gushed out and the dyspnœic symptoms ceased. The fistula which afterwards existed closed spontaneously after seven years.

In those cases in which when first seen the skin is beginning to soften and the pus point, all that is necessary is to make an incision in this area and establish drainage. It is not advisable, however, to wait until the condition has advanced so far, but is better to make a small incision in one of the lower crease lines of the neck, if necessary to ligate and cut the anterior jugular veins or their branches, split and retract the sternothyroids, and expose the capsule of the gland. At this stage, an aspirating syringe is useful; when pus is found the needle track is incised and dilated with sinus forceps. A small glass or rubber drainage-tube is inserted into the abscess cavity. In the latter of the two cases here referred to each lobe was drained in the way described, the two tubes leading out through a small incision, *en cravat*. Between the tubes from the gland a shorter tube was passed down to the cellular tissue of the neck. The wound was healed by the fourteenth day, but the patient subsequently suffered from thyrotoxicosis for which ligation of both superior and the right inferior thyroid arteries was performed in stages.[1]

Dyspnœa in these cases is very rarely sufficiently extreme to demand tracheotomy, the relief of tension in the gland by evacuation of its purulent contents sufficing to relieve the pressure on the trachea. If a sinus persists this may be due to the presence of calcareous nodules in the thyroid, and partial extirpation of part of the gland may be necessary when the inflammatory condition has become quiescent. Suppurative thyroiditis presents no great difficulty either in diagnosis or treatment, but its rarity is well illustrated by an annotation in THE LANCET of Jan. 29th, 1927, in which reference is made to a paper by Dr. H. M. Clute and Dr. L. W. Smith, of the Lahey Clinic and Pathological Department of the Harvard Medical School. Out of 3000 thyroid operations performed in this clinic only three were for suppurative thyroiditis.

Clinical and Laboratory Notes.

TWO CASES OF ADVANCED CARCINOMA OF THE STOMACH

By BEATRICE TURNER, M.B. LOND., M.R.C.S. ENG.,

HOUSE SURGEON TO THE CANCER HOSPITAL, LONDON.

IN view of the efforts at present being made to ensure earlier diagnosis of cancer, these two cases may be of interest.

CASE 1.—A man, aged 42, a pilot, was admitted on August 17th, 1925, complaining of pain in the left hypochondrium. He stated that 12 months ago he had begun to notice a feeling of fullness with occasional momentary pain in left side. This occurred about every second day and had no relation to food. As from February, 1925, he had noticed slight loss of weight, and had been to several doctors. In July, 1925, he saw Sir John Bland-Sutton, who told him he had a new growth of the stomach and advised against operation.

On admission the patient was a sturdily-built, healthy-looking man with florid complexion. No definite relation could be established between the pain complained of and ingestion of food. He was able to eat large meals, including meat, with hearty appetite and enjoyment. Palpation failed to reveal the presence of a tumour, although Sir John Bland-Sutton had been able to detect the presence of one.

A blood count gave the following results: red cells 5,010,000, white cells 8800, hæmoglobin, 92 per cent. Radiography after a barium meal showed an irregular filling defect, involving the greater curvature in the pyloric end of the stomach; there was no delay in emptying, but irregular traces of the meal were left in the stomach at seven hours. The appearances suggested a new growth, probably extensive. A fractional test-meal showed diminished total acidity and almost complete absence of free hydrochloric acid. At operation on August 21st it was found that the anterior and posterior surfaces of the stomach in the prepyloric area were extensively invaded by new growth which had involved the omentum. Operative removal was out of the question, and the abdomen was closed.

CASE 2.—A man, aged 48, a farmer, was admitted on Jan. 11th, 1927, complaining of pain before meals and discomfort after. He said that six weeks ago he had begun to have pain in the epigastrium before meals, it was relieved by taking food and did not occur every day; it might be absent for two or three days at a time. His appetite had been good, his food consisted of an ordinary diet, and apart from the slight discomfort complained of, he had been objectively and subjectively in perfect health.

On examination he was a well-built, florid-looking man, and nothing abnormal could be detected in the abdomen, except definite tenderness which could be elicited by deep pressure in the epigastrium. A barium meal showed an irregular filling defect at pyloric end of the stomach. There was no delay in emptying, but suspicious flare remnants were seen at seven hours, and the appearances suggested a new growth. A fractional test-meal showed diminished total acidity and almost total absence of free hydrochloric acid

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[1] This case was shown at a meeting of the Cardiff Medical Society at the Cardiff Royal Infirmary on Dec. 14th, 1926.

At operation on Jan 21st the stomach was exposed through a transverse incision dividing both recti, and was found to be the site of a large ulcer involving the anterior wall of its pyloric end No abnormally large glands could be detected, but the extensive infiltration of the surrounding stomach wall suggested that the condition was carcinomatous Partial gastrectomy was performed, with direct union of the jejunum with the cut end of stomach

A pathological report stated that the growth was a spheroidal-celled carcinoma, infiltrating the wall of the stomach The lymphatic gland selected for section was not involved

Convalescence was uninterrupted and the patient was discharged on Feb 14th

The special interest in these two cases lies in the almost complete lack of symptoms found in either of them Both patients looked extraordinarily healthy and there was no wasting or anæmia, no anorexia, and only very slight discomfort Very little could be found on examination In fact, without the aid of X ray and the laboratory, diagnosis would have been almost impossible The probability is that without the warning of Case 1, the second patient would not have been investigated until the condition was inoperable

For permission to publish these cases I am indebted to Sir John Bland-Sutton and Mr Percival Cole They were both under the care of Mr Cole at the hospital

THE USES AND LIMITATIONS OF CREAM IN INFANT FEEDING

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THE term " cream " is now applied in a wide sense and requires defining By " cream " may be meant (1) cows' milk or breast milk cream, or (2) synthetic cream, such as emulsions of cod-liver and other oils, known as Marylebone cream, New Zealand cream, and Vitoleum cream

Is there any particular value in high cows'-milk-cream-content in infant feeding ? Are whey-cream mixtures of great value ? Is very creamy dairy milk to be greatly sought after ? To answer these questions they must be considered from all sides If the infant be absolutely normal it takes such feeds and thrives on them That it thrives on them better than on less creamy foods, however, is a matter of debate Nevertheless, it does thrive There are numbers of infants, however, who are quite unable to manage a high fat-content in their feed, and possibly these represent 1 in 10 of the population To these infants such creamy mixtures are indigestible, they are not tolerated The fact that an infant thrives on a high fat diet is a guarantee of its normality Now let us consider the normal infant on this high fat diet when it is suffering from some mild or severe infection There is no doubt whatever that a severe degree of acidosis occurs in such a child as the result of its infection, and that this violent reaction would not occur if it were on a less ketogenic diet

The normal healthy infant may tolerate much fat during the cooler months of the year, but during the summer months, in a still atmosphere, a violent intolerance is apt to be shown if the food is pushed a little too far and the child urged over its bottle This bilious attack is less likely to occur if the child's diet is lower in cream Finally, the vitamin-content of milk varies with the season of the year and the food of the animal producing it In the winter months it has been shown that stall-fed cattle, much confined in dark stables, produce cream with extremely little vitamin[1] Probably on the whole then, the disadvantages of high fat feeding outweigh the advantages

Regarding synthetic creams, such as the various forms of cod-liver oil emulsion on the market and such creams as Marylebone cream, New Zealand cream, and vitoleum cream, another view must be taken That these creams are of great value to the infant apart from their vitamin-content is most debatable In other words, a good brand of cod liver oil emulsion, given in eggspoon doses, or a few drops of plain cod-liver oil three times daily immediately before feeds, is of as great value to the infant The nipple or teat should be placed in the baby's mouth at once, the cod-liver oil being washed down with the milk There are extremely few infants who do not tolerate minute doses of cod-liver oil if given in this way before their feeds. Many mothers complain that the food is vomited, but probably it is their own distaste for the oil which makes them administer it in a shrinking or awkward manner, causing the child to return it Putting the cod-liver oil in the bottle is useful, but it tends to remain behind on the sides of the bottle and in the teat itself When it is administered separately *after* the feed there is a danger, if it is awkwardly given, that the whole feed will be returned

To prolong feeding on milk—that is, feeding on an exclusive milk diet after six months—necessitates large quantities of milk being given This means, as a rule, a proportionate steady increase in the quantity of fat or cream being metabolised, and a tendency occurs in certain children to develop a chronic fat intolerance or inability to absorb the fat, known as cœliac disease Probably the greatest error made in feeding older infants and children is the too long continuance of the exclusive milk diet or the administering of milk in too large quantities

To conclude, therefore, quite sufficient fat or cream is present in an ordinary diluted cows' milk feed without any further additions Every infant, however, breast-fed or bottle-fed, should be given cod-liver oil in small doses from birth for its vitamin-content rather than for its food value

TWO CASES OF BUBONIC PLAGUE

BY H MERRICK BOSTON, M B, CH B LIVERP,
HOUSE PHYSICIAN, DAVID LEWIS NORTHERN HOSPITAL, LIVERPOOL.

THE following cases will probably be of general interest by reason of the comparative rarity of bubonic plague in this country The second case was discovered accidentally, the man not having sought advice A brief report of the two cases appeared in THE LANCET of Sept 11th, 1926 (p 573)

CASE 1 —A boy, aged 10, was admitted to the David Lewis Hospital at 6 A M on August 28th, 1926, having complained of headache and nausea since the previous evening, during the night he had vomited several times, and towards morning had experienced short periods of delirium

On admission he appeared to have some abdominal pain, but there was no resistance or tenderness, except in the left groin, where there were enlarged glands which appeared painful on palpation The spleen was not palpable, nothing abnormal was found in the chest, the reflexes were normal, the patient was flushed, the temperature 106° F, the pulse-rate 36, and the respiration-rate 36 (The temperature remained above 101° F throughout the illness, except during the two hours following lumbar puncture)

During the day the patient was semi-conscious, with periods of delirium; obviously there was severe toxæmia Blood was taken for a Widal reaction, which was reported negative for the typhoid group

On the 29th the boy persisted in lying on his right side, with the head thrown back, his condition rather suggesting meningitis, although Kernig's and the usual ocular signs were absent Lumbar puncture was performed, and about 5 c cm of fluid were withdrawn, it was clear and not under pressure He seemed slightly relieved for a few hours, and the temperature, pulse- and respiration rate dropped, but they rose again later Blood and fluid were put into culture media, but on incubation proved sterile No clot formed in the fluid on standing During the day delirium became more marked, morphia gr 1/6 was of no avail, later hyoscine hydrobromide gr. 1/100 quietened him for some hours

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[1] Chick and Roscoe. Biochem Journal, 1926, No 3, xx, 632–649

On the 30th he was delirious and required restraint; by about midday his pupils had dilated, the head was retracted, and breathing had become stertorous He collapsed suddenly about 3 P.M.

At the *post-mortem examination* made by Dr L Cunningham, pathologist to the hospital, nothing abnormal was found except a mass of enlarged hæmorrhagic glands in the left groin These were removed and submitted to Dr L S Ashcroft, assistant city bacteriologist, and bacteriologist to the hospital. Direct smears showed organisms very suggestive of *Bacillus pestis* A guinea-pig and rat were inoculated, and within 24 hours were obviously fatally affected, they died within 48 hours, and cultures from them confirmed the suspicion of *B pestis* infection.

CASE 2—The father of the boy, aged 60, came to the hospital on August 30th in connexion with the death of his son. He looked ill and on question complained of having had headache (pains over eyes and back of neck) and nausea since the previous Friday; he also felt "good for nothing" and looked it When asked, he said he had a small swelling in right groin, only noticed on Sunday, and not painful His temperature was 98 6° F and varied between that and 97° while in hospital The pulse-rate was 120, and settled down to 100, the respiration-rate was 28, and varied between 20 and 28 The bowels were rather constipated

With some persuasion he came into hospital for a rest; and on further persuasion he agreed to part with his gland; this was removed on the following day under local anæsthesia, and was found to contain pus This, with a portion of the gland tissue, was sent for bacteriological examination, results being again indicative of *B pestis*

The man and his family were taken to the Port Isolation Hospital, but no further cases developed

Four weeks later, after discharge from isolation, he looked much fitter and was ready for work

This patient (Case 2) worked in an office on the grain wharf. He was not employed in actual contact with cargo, but there were rats in his office, and one had been seen in his home. It is suggested that the train of infection was probably from a grain ship, via grain wharf and office to the man, and thus to his home. A thorough investigation and all necessary precautions were taken in hand by the public health authorities

I am indebted to Dr. J Murray Bligh, senior physician, and Dr L Cunningham, assistant physician, for permission to publish these cases, which were admitted to hospital under their care

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Medical Societies.

ROYAL SOCIETY OF MEDICINE.

COMBINED SECTIONS OF ODONTOLOGY AND DISEASES OF CHILDREN.

ON April 6th these Sections held a joint discussion on

ORAL MANIFESTATIONS OF GENERAL DISEASE IN CHILDREN,

the chair being occupied by Mr J B. PARFITT, the President of the Section of Odontology

Mr A T PITTS presented the point of view of the dental surgeon to whom, he said, nothing appertaining to the mouth was foreign He would not attempt to catalogue the oral manifestations which were due to systemic disease, but would pick out for consideration some which had come under his notice and excited his interest, and he would ask questions to which an answer would be valuable

Osteomyelitis of the maxilla might, he said, occur in babies only a few months old Was the condition in these infants a true osteomyelitis or an antral infection? As in very young subjects the maxilla was a thin shell of bone containing the developing teeth, the crypts of the teeth soon became infected. and often such cases came under the dental surgeon's care The treatment should be cautious and limited The necrosis might last a long time, but it did not seem to become acute nor to spread rapidly. In cases of tuberculosis of jaws which he had seen in children the infection had been in the mandible, and he asked whether in these cases the disease was secondary to tubercle in some other part of the body Could it occur in a clean mouth, or must there already be a dental infection?

Turning to localised suppuration of the jaws which originated elsewhere than in the teeth, he said that cases were sometimes encountered in which the conditions resembled alveolar abscess, and he asked for suggestions as to their pathology In order to exclude a dental cause a radiogram must be taken; apparent healthiness of the teeth was no criterion. He had seen a number of cases of this kind in which the patient had been for some time under medical care without the condition having been suspected Removal of the offending tooth had led to cure

Necrosis of jaw following scarlet fever appeared to have been common some time ago, but was now rare An instance had been reported to the Odontology Section by Mr T B Layton With regard to tooth changes found in congenital syphilis. Mr. Pitts said that Hutchinsonian teeth showed two features—namely (1) an alteration in the architecture of the tooth, so that its sides converged towards the cutting edge; (2) the existence of an area of badly formed enamel on the cutting edge; or there might be an actual deficiency of enamel leading to a notch or rendering one likely. Speaking of anomalies of eruption and development, he asked whether rickets retarded eruption and if so, whether the retardation only affected the deciduous teeth or also the permanent ones Sometimes dentition was in advance of the child's years Did this point to the development of the teeth being regulated by the endocrine glands?

In conclusion Mr Pitts dealt with oral manifestations such as scurvy due to vitamin deficiency It had been suggested, he said, that follicular stomatitis in children could be attributed to lack of water-soluble vitamin B

Dr. ROBERT HUTCHISON, from the medical aspect said that the affections of the jaw in general disease were more surgical than medical, but general hypoplasia of the skeleton—e g in some forms of infantilism—affected the jaws, and it was interesting to speculate as to what part was played in this by endocrine disturbances Over-action of the anterior lobe of the pituitary caused an overgrowth of the lower jaw in acromegaly. and possibly pituitary deficiency might result in under-development of the jaw during the period of growth But in cases of dyspituitarism such an under-development did not occur. There was even less reason to believe that deficiency of vitamin B in the diet could interfere with the development of the jaw as had been suggested. Rickets, however, could act in this way, though he thought it did so less than had been supposed.

The teeth seemed to be more affected by general disease than did the jaw. In rickets the appearance of the teeth was delayed He thought the teeth were a better index of the real age of the patient than was the stage of ossification of the epiphyses The influence of general disease on the calcification of the teeth was very important. as was well seen in rickets and Mrs Mellanby had shown that this was due to a deficiency in vitamin A. The effect of inherited syphilis on the teeth was well recognised, and anything which impaired the general health might interfere with the laying down of enamel; measles and pertussis were very apt to act in that way Dr Hutchison thought that variations in the reaction of the saliva due to affections of general health might affect the enamel In nervous children the saliva was apt to be unusually viscid Children who were mentally defective and those who suffered from dyspepsia—perhaps also those with worms—were apt to grind their teeth The gums, being highly vascular, easily became affected in hæmorrhagic diseases, such as scurvy, the lymphatic leukæmias, and purpura Hypertrophy of the tongue was met with in cretinism, and to some extent in Mongolism Affections of the mucous membrane of the mouth were, in his view, for the most part purely local, and did not indicate any general disorder This was certainly true of the common forms of stomatitis, but in the ulcerative and gangrenous form lowering of the general health played a large part He did not feel convinced, however, that vitamin deficiency was a factor in this debility In the delayed form of inherited syphilis there might be perforation of the soft palate; often it was associated with interstitial keratitis He could not say whether the teeth also were affected

Summarising, Dr Hutchison said that the oral manifestations of general disease in childhood were, except in the case of the teeth, neither numerous nor important He believed, also, that too much emphasis was laid on the supposed effects of oral disease on the general health.

Discussion.

The **PRESIDENT** said that the great resistance of the oral tissues to trauma and to all kinds of bacterial invasion might partly explain why the oral manifestations of disease were not very marked

For the production of caries it seemed necessary that certain organisms should be present, but there must be something in addition, otherwise every tooth would be carious He had met with ropy saliva in association with caries, but not in children, though they were particularly liable to caries He wondered whether there might be some endocrine disturbance which influenced the degree of immunity to bacterial invasion. And in periodontal disease there was some factor beyond mere infection, it was rare in children, common in adults The dental surgeon could keep a careful watch on the children who came to him from time to time, and if he found that a child who had been normal began to develop facial irregularity or caries, he should see that the medical man was apprised of it

Dr **H C CAMERON** spoke of two distinct types of children, in one of which the teeth were habitually faulty, whilst in the other they were comparatively well formed, well erupted, and with good enamel. Caries was apt to occur chiefly in the child with a high lymph content in its body, as shown in adenoids and enlarged tonsils Such a child had a large appetite, a clean tongue, and loose bowels, and showed a marked tendency to catarrh; this catarrh, he thought, conduced to an inefficient functioning of the enamel organ Sometimes in these children the molar teeth were not erupted vertically, but lay almost on their side, so that instead of the grinding surfaces meeting surface to surface they met at their edges The other type of child, with good teeth, usually had an intellectual inheritance, and the metabolic instability with which this was usually associated, often including attacks of sickness and cyclical vomiting. Mothers were frequently advised to see that their children were given hard foods so that vigorous biting was necessary, in order to ensure a proper development of the jaws But he thought a child who developed well and had good neuromuscular control, and who walked and talked early, could be trusted also to use its jaws efficiently. On the other hand, a child whose infancy was punctuated by repeated attacks of catarrh and who was slow in walking would probably use its jaws late and perhaps insufficiently

Dr **DAVID NABARRO** dealt with the question of the teeth in congenital syphilis He said that when people talked of Hutchinsonian teeth they had in mind the teeth which showed the characteristics grossly so that they could scarcely be missed Such teeth were rare The common Hutchinsonian teeth were those with the characteristics less marked, and they were often overlooked His experience was that the lower incisors showed these features when the upper incisors were markedly Hutchinsonian; they were small, their anterior surfaces were very convex, and the teeth were widely spaced. He had looked up the records of 208 children under 7 years of age Of these 32 had typical Hutchinsonian teeth, whilst the remainder had not He had had 12 cases of ulceration of the palate in 12 years This, with perhaps gummatous disease of bone, was evidence of syphilis Most of these children were from 8 to 10 years of age In only one of the 12 cases were the teeth Hutchinsonian, and in this case the boy had bosses on the head, was deaf, and had interstitial keratitis and choroiditis, yet he looked healthy, and it had been difficult to persuade the parents to let him come for treatment In two of the other children there was wide spacing between the lower incisors, and one had a notched incisor. Therefore it was not possible entirely to accept Hutchinson's statement that the teeth were not affected when the palate was ulcerated In cases of ulceration of the palate the Wassermann was very resistant, he had got a negative Wassermann in only four of the 12, and in the others it was resistant, though tested over a period of five or six years, the children meantime having had 20 to 40 injections of novarsenobenzol He had examined the cerebro-spinal fluid of 11 of the 12 patients, and in all but one of them it had been negative, that one case had had hydrocephalus and optic atrophy.

Mr **F. N. DOUBLEDAY** related a case in which the diagnosis of syphilis was made because of lesions of the mouth, and in which the conditions had turned out to be lichen planus with unusual oral manifestations Dr Hutchison, he thought, was apt to belittle manifestations of disease as found in the mouth. A condition in children which might somewhat simulate osteomyelitis of the jaw of adults was an infection of the crypts of the permanent teeth beneath the temporary teeth Stomatitis due to *Bacillus fusiformis* yielded readily to treatment with chromic acid He asked about the influence of preparations of ductless glands on some mouth conditions in children In the case of a woman, aged 18, who seemed like a child of 8. the medical man had given ½ gr doses of dried thyroid extract, after which she began to grow, and the teeth erupted well He had also seen cases in which the jaws grew after anterior pituitary extract He expressed his regret that so many practitioners advised mothers to give their children plenty of sweets, for he believed that such messes remained only partially digested in the alimentary tract and afforded a suitable pabulum for streptococci

Dr. **J KINGSTON BARTON** thought that much of the maldevelopment of the lower jaw seen in children and also in adults was due to bad feeding in early childhood He agreed with what Mr Doubleday had said in regard to children eating a lot of sweets

Mr **P. G DOYNE** spoke of the association of lamellar cataract with defective enamel on the teeth His experience was that Hutchinsonian teeth were infrequently associated with interstitial keratitis

Dr **A LIVINGSTON** said there were two types of inflammation of the gum margin—one of them local, due to carbohydrate stagnation, and the other caused by a general lowering of the resistance of the body, often accompanied by constipation or by such systemic upsets as diarrhœa

Dr **ALAN MONCRIEFF** asked whether the statement was true that in congenital syphilitics the teeth commenced to erupt much earlier than normal.

Mr **HAROLD CHAPMAN** said that he regarded irregular teeth as an expression of bad development of the maxilla and mandible, and therefore of the bones of the face He had no reason to believe, from the investigations he had made, that an undeveloped or a badly developed jaw was due to bad feeding The question whether orthodontic treatment should be accompanied by medical treatment was one for the decision of the general physician

Mr **PITTS** and Dr. **HUTCHISON** replied

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

A MEETING of this Society was held at Liverpool on April 1st, Prof. FLETCHER SHAW, the President, in the chair.

Dr. J. W. A. HUNTER described his observations on

Experimental Endometrial Grafts

Although, he said, a considerable amount of work had been done on this subject, all workers appeared to be satisfied when they had demonstrated the possibility of heterotopic endometrial growth. No one had as yet reproduced in animals a condition comparable to that of tarry ovarian cysts in women.

His own work had been carried out on some 40 rabbits and the transplants were mostly autogenous, but a few were heterogeneous. The general reaction obtained was the growth of a multilocular cyst lined by columnar epithelium which was non-infiltrating; there was stromal proliferation in the papillary buds only. In rabbits killed on the third and tenth days after grafting two methods of cyst formation were found. The epithelium either dipped down into the graft to form a cyst, or it covered the graft and lined the under surface of the layer of fibrin which sealed in the graft. It was also noticeable in these experiments that whilst the columnar epithelium was scanty in the depths of the graft, it always covered the outer surface and grew along the lines of tissue junction. The stroma in the early stages was engorged.

In order to test the effect of vascularity some grafts were placed in the liver and some in an avascular part of the abdominal wall in the same rabbit. The former showed considerable proliferation of the endometrium with preservation of the racemose gland arrangement, but it was surrounded by a definite capsule. The latter showed a scanty growth of epithelium of a low activity. Even after 290 days a very active growth was found in the liver, but growth was not so exuberant in the ovary. In another animal after 388 days the general reaction was obvious, and after 760 days very small cystadenomata were found in atrophic ovaries.

To test the influence of ovarian hormone grafts were made into the ovaries; two ovaries from another animal, containing corpora lutea, were transplanted into the abdominal wall. Fifty-four days later very large cystadenomata were found with adhesions to many adjacent organs; microscopically they showed large thin-walled cysts without invasion of surrounding structures. This result could only be obtained when the grafted ovaries from another animal contained corpora lutea. In an experiment in which the grafts were placed in the abdominal cavity of a male rabbit it was found 30 days later that there was no trace of the columnar epithelium, but the gland spaces remained. An attempt to confirm the "serosal" theory by the implantation of pieces of peritoneum and subperitoneal tissue gave a negative result, although there was an active growth of the mesothelial tissues. In one case in which grafts were placed in the ovary, and the ovary was then transplanted into the abdominal wall, definite endometriosis with invasion was produced.

Dr. Hunter concluded from this series of observations that fragments of endometrium, when grafted into any organ, could grow. The factors which controlled growth of the stroma and endometrium were not the same, and the hormone of the corpus luteum had a selective action controlling growth of the endometrium, more especially its epithelial portion. The experiments showed, he said, that whereas implanted endometrium could continue to grow for an almost unlimited time it did not, under normal circumstances, become invasive. In the one instance in which an abnormal factor was present (transplantation of the ovary which was the site of the graft) the typical picture of endometriosis was obtained. This rather suggested that for the production of the human picture one factor—either the endometrium or the invaded tissue—must be abnormal.

Dr. Hunter expressed his indebtness to Prof. H. S. Raper and the staff of the Physiology Department of the Victoria University, Manchester, for the facilities extended to him.

Dr. S. B. HERD asked whether the time in the œstral cycle at which the endometrium was taken for grafting made any difference to its capacity for growth.

Prof. BLAIR BELL expressed his appreciation of Dr. Hunter's work. He passed round a specimen—one of several—obtained in his own laboratory, showing that it was possible experimentally to secure not only an endometrial tumour by implantation, but also, during pregnancy at any rate, to produce a shower of glandular implants over the whole peritoneal surface of the abdominal cavity.

The PRESIDENT also congratulated Dr. Hunter on his work, and stressed the importance of comparing clinical and experimental results.

Dr. HUNTER, in reply, said that in his experience the time in the œstral cycle at which material was obtained for grafting made no difference to its capacity for growth.

Prof. DANIEL DOUGAL reported

An Unusual Malformation of the Left Broad Ligament

A married nullipara, aged 45, complained of a blood-stained discharge of 12 months' duration; a severe hæmorrhage had occurred two months before she was seen. The uterus was enlarged; the cervix was much thickened, very hard and stretched, and there was a good deal of bleeding on examination.

On opening the abdomen it was found that the uterus contained a number of fibroids, including one in the cervical canal. The main interest, however, lay in the malformation of the left appendage. The left ovary lay with its inner pole close to the internal abdominal ring, and running from it into the inguinal canal was a thick muscular cord, about one-eighth of an inch of this being visible between the ovary and the ring. The ovary was normal in appearance. The left Fallopian tube was somewhat small, and terminated on the outer side of the ovary more than 2 inches from the uterus. The fimbriated end was fully developed. The kidney and ureter were completely absent on this side.

Running from the ovary towards the uterus was a fold of peritoneum, in the outer part of which could be made out a fibromuscular structure which tapered to a point and terminated about 1 inch from the uterus. The peritoneal fold joined the uterus about the junction of the body and cervix. The right ovary and tube were apparently normal, and were attached to the uterus at a much higher level than the peritoneal fold on the opposite side. The uterus itself was much distorted by the presence of fibroids, but was assumed to be of unicornuate type, the left horn being completely absent. The upper part of the left Müllerian duct formed the Fallopian tube, and there the further development of this structure had ceased. The Wolffian structures on this side were evidently absent.

The position of the ovary at the internal abdominal ring was interesting, said Prof. Dougal, as the fibromuscular cord attaching it to the ring presumably represented both ovarian and round ligaments. As the Müllerian duct on this side had not grown inwards to fuse with its fellow of the opposite side the gubernaculum had drawn the ovary straight downwards to the inguinal ring. The malformation was undoubtedly rare, and he had only been able to find a record of one somewhat similar case, published by Bonnaire and Durante in 1912.

Prof. BELL said that true uterus unicornis was very rare. Most cases so described had been, in reality, cases of uterus bicornis in which one horn is poorly developed. Two other points of interest were demonstrated in Prof. Dougal's specimen. First, the ovarian ligament on the side on which the uterine horn had not developed ran straight to the inguinal ring, indicating the truth of views emphasised by Prof. Bell many years ago that the round ligament and the ovarian ligament were one structure, and together represented the gubernaculum. The second point of interest was that, although the Fallopian tube as a whole was not formed, the fimbriated extremity was present—a matter of common observation in many cases of malformation of the parts, and one which bore out Keith's contention of the origin of the fimbriated extremity from the pronephros

Prof **Dougal** also described a case of

Unilateral Duplication of the Ureter with One Ectopic Opening

The patient, aged 24, unmarried, consulted him because of deficient control over micturition almost since birth She was able to pass urine in the ordinary way, but in addition was wet both night and day She always wore a diaper and used three in the 24 hours, one during the night and two during the day

On inspecting the vulva Prof Dougal thought that he observed urine welling up from the vagina He therefore decided that the condition was more than a mere weakness of the sphincteric control of the bladder, and admitted her shortly afterwards to a nursing home for further investigation under anæsthesia During this examination he found that the urine escaped periodically from a small opening in the vestibule just below the urethral opening and a little to the right of the middle line The urine coming from this opening did not pass through the bladder, and it was therefore evident that the condition was one of ectopic ureteral opening

It was suggested that a general surgeon be called in to investigate the urinary tract, and Mr Wilson Hey found that there were two ureteral openings normally situated in the bladder, and that both were acting normally In addition there was a second ureter on the right side and this one had an ectopic opening on the vestibule Sodium bromide was injected into the bladder opening of the right ureter, but only a small quantity could be passed in, and there appeared to be some obstruction in the upper part Sodium bromide was also injected into the ectopic opening of the right ureter and passed freely up to the renal pelvis

Evidently the patient had two pelves and two ureters on the right side, said Prof Dougal, and one of these ureters had an ectopic opening from the vestibule The abnormality was obviously of clinical importance, but was also interesting from an embryological point of view, as the ectopic ureteral opening in this case was situated at the point where Gartner's duct was usually supposed to terminate An exhaustive paper on the subject had been published by Kilbane in *Surgery, Gynecology, and Obstetrics*, 1926, vol xlii

Prof **Ernest Glynn** described a case of

Idiopathic Dilatation of the Bladder

The patient was a woman aged 48 Trabeculæ were well developed in the bladder and a small sacculus was present There was also a moderate amount of bilateral hydronephrosis The uterus was normal Prof Glynn had made post-mortems on two similar cases in men, and wondered how far such a condition might be produced by habit It must be remembered that idiopathic hypertrophy of the bladder with hydronephrosis was described in children He himself had seen the condition post mortem in males aged 12 and 16

Dr J E **Gemmell** described two cases he had seen In the first no cause could be assigned but in the second the condition had certainly been due to habit Finding it very difficult to leave her work, the patient had accustomed herself to going all day without emptying her bladder

Dr W W **King** also quoted two cases due to habit, one in a cinema pianist and the other in a chronic alcoholic who had prolonged periods of unconsciousness

Prof **Glynn**, in reply, quoted a similar case in a policeman who was on point duty for long hours at a time

Prof **Blair Bell** described a case of

Primary Adenocarcinoma of the Fallopian Tubes

The patient was a 1-para aged 45 She complained of pain in the back and hypogastrium and a yellow inoffensive discharge for 12 months, there was frequency of micturition and she became exhausted on the slightest exertion The uterus was thought to be enlarged, irregular, and immobile A large swelling was felt through the anterior fornix evidently pressing on the bladder A hard mass was felt on either side of the uterus Panhysterectomy with bilateral salpingo-oöphorectomy was performed, but was extremely difficult owing to the density of the adhesions and the presence of bilateral ovarian cysts, which appeared to burrow deeply in the loose tissues of the pelvis Subsequently a small vesico-vaginal fistula was found and easily repaired

Primary carcinoma of the Fallopian tube, said Prof Bell, was rare, less than 150 cases being reported in the literature Probably the condition occurred with greater frequency, but the cases were not recorded He had had three cases but the other two cases had not previously been fully reported In reply to a question, he said that he considered primary carcinoma of the Fallopian tube on a par as regards malignancy with adenocarcinoma of the body of the uterus For a long time, that is to say, the disease remained enclosed within the tube and during this period extension or metastases were rare Once however, the tube wall was penetrated extension was rapid

Prof Bell also showed three cases of Krukenberg tumour and a case of carcinoma of the cervix with pregnancy

Mrs **Dobbin Crawford** reported a case of double vaginal cyst arising from Gartner's duct

NORTH-WESTERN TUBERCULOSIS SOCIETY.

A meeting of this Society was held in Manchester on March 31st, Dr A **Adams**, the President, in the chair

Prof S **Lyle Cummins** read a paper on

The Bearing of Recent Laboratory Research on Clinical Conceptions in Tuberculosis

His experience in the post-mortem room, he said, had impressed upon him the pleomorphism of tuberculosis in human beings as compared with its uniformity in animals In the laboratory animal there existed what might be called natural tuberculosis, the same characteristics being found also in infants and primitive races—namely, generalisation of the disease with rapid termination This was in contrast with tuberculosis as usually seen in human beings—that is to say, pulmonary disease Some modifying factor appeared to have been at work, and modified tuberculosis tended to be localised in the lungs In between was the big zone of surgical tuberculosis It was the aftermath of an unrecognised general tuberculosis causing metastatic deposits via the blood stream A later stage was localisation of the disease in the lungs In natural tuberculosis the tuberculin test produced a negative or slight reaction, in modified tuberculosis it produced a marked reaction Natural tuberculosis was characteristic of non-allergic age-groups and races, whilst modified tuberculosis was characteristic of allergic age-groups and races, the modifying factor being the production of allergy

There were three questions concerning pulmonary tuberculosis which were still unsolved 1 Is the disease caused by the reawakening of an infection in childhood, or due to the reinfection of an allergic lung? 2 Do the bacilli enter through the alimentary tract or by the inspired air? 3 Why is the disease more commonly apical than otherwise?

As regards the first question, much experimental work had been done Baldwin had taken infected guinea-pigs and had tried to reinfect them, he had found them very resistant to reinfection but had succeeded with large doses Krause and Willis had introduced an emulsion of bacilli into the skin of guinea-pigs, and had found that, even one hour after inoculation, excision of the piece of skin infected was too late to prevent infection of the animal If, however, the animal had previously been infected, five days was not too late which showed that there was great retardation in infected animals Similarly, they had found that in previously uninfected animals the neighbouring glands were reached within 24 hours, but in animals previously infected they were not reached in 21 days Thus a previous infection caused retardation and modification of disease The presence of scars in the lungs of adults was evidence that much early tuberculosis in children did heal

There was a correlation between physiological influences—e g , childbirth, lactation and strain—and infection, and this pointed to the awakening of an old infection On the other hand, no infection came from healed scars It was difficult to establish definite sources of infection, but these certainly did occur Experiment had shown that if an emulsion of bacilli was injected into the posterior nares of rabbits under an anæsthetic either lung could be infected Soper had repeated these experiments with X ray control, and definite parenchymatous lesions had been shown in the lungs of allergic rabbits long before rabbits previously uninfected showed lesions But the reaction in the latter, though delayed, was more serious Calmette held such experiments to be unnatural The evidence on the first question was thus inconclusive, but it was clear that pulmonary tuberculosis was due to a reawakening of previous infection, and there was strong evidence in favour of reinfection

As regards the second question, continued Prof Cummins, Calmette believed in the alimentary route of entry Guinea-pigs fed on fatty broth containing bacilli showed bacilli in the lacteals in three hours In early life the mucous membrane was more easily permeable ; on the other hand, it was to be noted that in later life most bacilli in the lungs were of human type, whereas swallowed bacilli were usually bovine Moreover, in spite of much swallowed sputum, intestinal ulceration was comparatively rare Calmette, however, maintained that in animals infected in the laboratory the lungs were always infected. Prof Cummins himself believed that both types of infection occurred

Referring to the third question Prof Cummins quoted Bacmeister's experiments in which the apices of rabbits' lungs were constricted by rings When bacilli were injected intravenously (ear) there was a concentration of bacilli under the rings, but when bacilli were puffed down the respiratory passages no such concentration occurred, the lesions being general in the lungs These experiments could not really be regarded as satisfactory, owing to the stagnation of the circulation caused by the rings He had himself made observations on groups of coal-miners and had found that in those who had worked with silica the lymphatic blockage was more effective at the apices than elsewhere, whereas normally coal dust was readily dealt with by phagocytosis

A discussion followed

Reviews and Notices of Books.

THE SPECIALITIES IN GENERAL PRACTICE

Compiled by FRANCIS W PALFREY, M D , Instructor in Medicine at Harvard University in collaboration with others London and Philadelphia W B Saunders Company 1927 Pp 748 30s

THIS book has been skilfully designed " to simplify the problem of the general practitioner in dealing with specialties " Recognising that in the course of his training the medical student's instruction in special subjects is usually insufficient to give him practical familiarity with them, the compiler of the volume has produced a mass of information on these subjects which, while concise enough to stand as a reference book, is discursive enough to provide good reading There are 11 sections the first on dermatology written in collaboration with Dr Lawrence Oliver, introduces a new classification, in which symptomatology rather than pathology is the determining factor , this arrangement should be of assistance to the practitioner, as it is for symptoms that his patients present themselves, and the pathology of diseases of the skin is especially obscure This section occupies over 100 pages Dr Dellinger Barney has assisted in the succeeding section on genito-urinary surgery An essay on sexual hygiene is followed by concise descriptions of the common diseases met with in practice In the third section, on gynæcology, Dr W P Graves and Dr F A Pemberton collaborate with good results Dr Crosby Green helps with the fourth section which deals with rhinology and laryngology , special attention is paid to the various types of sinusitis Dr James Torbert is concerned with a 40-page section on obstetrics in which antenatal care and examination receive emphasis , an extended position of the thighs during the passage of the perineum in labour is thought to be prophylactic against perineal tears A systematic description of ophthalmological conditions constitutes the sixth section, the subject matter being founded on Harvard lectures by Dr George Derby The failure of the general practitioner to recognise early glaucoma is stressed

Some lectures by Dr R B Osgood and Dr N S Allison are the basis of a large section on orthopædics , in it methods of examination are usefully tabulated Arthritis deformans is divided into the atrophic or proliferating and hypertrophic or degenerative types, alternative names which do not flatter the ætiological knowledge of chronic arthritis now available Talipes, wry-neck, and other deformities are dealt with, foot-strain receiving special attention Dr Harold Walker's lectures on otology form the basis of the eighth section, which is prefaced by a good anatomical summary Diseases of infancy and childhood are well condensed in a section on pediatrics compiled with the help of Dr Richard Smith and Dr. Randolph Byers , it includes a useful page or two upon examination of the new-born infant and an efficient account of breast and artificial feeding, cows' milk being set forth as the proper basis for the latter The tenth section on psychiatry, written by Dr H C. Solomon, is an excellent instance of the useful nature of the whole book Probably in no specialty is the average general practitioner so little instructed as in mental disease, and this section provides in a simple form a detailed survey of abnormal psychical states whether dependent on gross disease or functional The volume ends with a section of 100 pages on surgery, which omits few common conditions from its concise survey, and deals briefly with such practical emergencies as shock, drowning, hæmorrhage, and snake-bite It is written in collaboration with Dr Channing Simmons, and concludes with a very complete schematic tabulation of the treatment of fractures

This book in all its eleven sections, draws attention in a valuable way to, and provides a remedy for, a very real need in the busy life of the general practitioner It steers a middle course between the rule of thumb method and too much discursiveness , the teaching is orthodox, definite and practical, and should ensure the success of the book All concerned in its production are professors or instructors in the Medical School of Harvard University

MEASLES

La Rougeole—Épidemiologie, Immunologie, Prophylaxie By ROBERT DEBRÉ and PIERRE JOANNON. Paris Masson et Cie 1926 Pp 288 Fr 35

A SURVEY of the recent work on measles from the standpoint of epidemiology, immunology, and prophylaxis is most opportune This work does not pretend to be an exhaustive treatise but contains largely the authors' own experience and research, and is a useful contribution to the literature of the subject of measles The first part of the book deals with epidemiology, and includes chapters on the mortality from measles and the factors influencing it, such as sex, age, surroundings, and the social factors concerned in the greater death-rate amongst the working classes In the second part, dealing with immunology, the authors discuss the susceptibility of man, the various types of the disease, infectivity, and the production of immunity. Lastly, there is a section on prophylaxis, which contains a chapter on general prophylactic measures The remainder of the section—which takes up about half the book—is devoted to an exhaustive account of the prevention of the disease by means of serum from a convalescent patient. Numerous protocols are described in detail A chapter is devoted to the obtaining and preservation of the serum, to its administration, and indications for its exhibition Full details are given of results, and the reasons for failure are enumerated An account of the organisation devised for the collection and distribution of convalescent serum in France and other countries is included The use of blood and serum from persons having had measles some time previously, and not in the category of convalescent, is discussed Lastly, the authors review the literature on active immunity against measles, beginning with a full account of the work of the Edinburgh physician, Francis Home, who in 1758 applied blood from a measles patient to a scarified surface of the arm, as in vaccination against small-pox The account of the work on the active immunisation against measles up to the present date shows that the results which have been published up to the present are surprisingly meagre

The authors have produced a book which should be read by all those interested in the subject of measles The use of convalescent serum is particularly complete, and rightly so, as the authors have made notable contributions to the literature Indeed, the phenomena of blanching of the measles rash after the intradermal injection of convalescent serum (corresponding to the Schultz-Charlton reaction in scarlet fever) is known as the Debre phenomenon after one of the authors of this treatise The book is simply written Numerous diagrams and tables of statistics are included The bibliography is fairly complete, especially with regard to the work of French observers This work should appeal to those engaged in public health work and administration

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TROPICAL SURGERY AND SURGICAL PATHOLOGY.

By K K CHATTERJI, F.R C S I, Major I T F Medical Corps London John Bale, Sons and Danielsson, Ltd 1927 Pp 244 16*s*

IN many respects surgery in the tropics does not differ materially in methods or execution from the art as practised elsewhere Tropical surgery, covered by this book, is a much more limited field, and the fact that "Surgical Pathology" has been chosen for the subtitle indicates that due attention is given to the life-history of those parasites to which tropical surgery, *sensu stricto*, is due Major Chatterji's book deals mainly with surgical conditions produced by two important parasites—the *Entamœba histolytica* and the *Filaria bancrofti*—and he has dealt with both in an able manner His descriptions of operative procedure and his knowledge of the underlying pathological conditions have been culled from quite an exceptional first-hand experience Hepatic amœbiasis, as experienced in India, is a much more complex subject than a superficial acquaintance of liver abscess as met with in Europe would indicate, while under filariasis quite a number of conditions are described which have remained unrecognised by the writers of text-books of tropical medicine Other sections worthy of comment are those on the tropical granulomata and the surgical effects of snake-bite, while the instructions for the preparation of saline injections for cholera and the methods of administration are clear and precise A number of statistical appendices and a useful bibliography are included This book contains many original ideas and methods, the author's apparatus, the simultaneous aspiration and irrigation of obstinate hepatic abscess, and his methods of injecting the ethyl esters of margosic acid in filarial hydroceles and cysts are noteworthy. Copious illustrations are given, to the Western eye the coloured plates are lurid and terrifying, but they are all original and clear A few curious slips might be amended in future editions The statement (p 39) that the phrenic nerve arises from the brachial plexus is inappropriate in a surgical work, nor do microfilariæ become "chitinised" in the hydrocele wall.

This is a book which should be read by every operating surgeon in the tropics, it must be considered as a solid contribution to Indian surgery.

NERVOUS AND MENTAL DISORDERS FROM BIRTH THROUGH ADOLESCENCE

By B SACHS, M.D, Consulting Neurologist to the Mount Sinai and Montefiore Hospitals, New York, and LOUIS HAUSMAN, M.D, Instructor in Neuro-anatomy, Cornell University Medical College London Humphrey Milford, Oxford University Press 1926 With 110 illustrations and three plates Pp 861 50*s*

THIS elaborate text-book on the nervous and mental diseases to which children and young people are subject has grown out of that older treatise, on the same topic, which was written by the senior author of the present volume when neurological conceptions were considerably different from what they are to day "New" diseases have made their appearance, and principles of approach to neurological problems are now oriented more from a physiological than from a morphological aspect Verbal descriptions of disease symptoms do not suffice, questions of pathogenesis and of ætiology have assumed greater importance, and we hear more of reactions to injurious agents or of biological responses to extrinsic or intrinsic stimuli than formerly In respect of so-called functional disorders the growing-point of neurology has altered materially in the course of the last 20 years Changes of these kinds are reflected in the volume under review, yet the essentials of careful clinical observation must always remain The chapters on encephalitis, poliomyelitis, extrapyramidal disease, endocrine disorders, may be selected as representing the embodiment of recent acquisitions to knowledge, and as conveying to the reader in a discriminating way such data as have been proved to have abiding significance Special interest attaches to the fifth part of the book, which deals in a sane and critical fashion with modern ideas in respect of the neuroses and psychoneuroses, as well as the psychoses, and contains a chapter on the normal child that is certainly not out of place in a text-book of disease, but is, on the contrary, as desirable as a section on neurophysiology.

Good bibliographies at the end of each section, and good illustrations, contribute to the excellence of this latest volume on neurological pediatrics

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MENTAL GROWTH AND DECLINE

By H L HOLLINGWORTH, Ph D, Professor of Psychology in Barnard College, Columbia University. London and New York. Appleton and Co 1927 Pp. 396 10*s*

Dr Hollingworth writes for the general student and handles his subject practically. An example of his methods is the statistical testing of the belief that the only child is prone to emotional instability, and he shows that among college students at least there is no appreciable difference telling against the only child But he overlooks an inconsistency in his statistics when on page 30 he says that the degree of intelligence exercises a determining influence on the nature of neurotic complaints. He quotes Tendler's figures in support of this thesis, and on the next page gives his own figures which, on examination, show an influence in the opposite direction Matthew's questionnaire is a useful guide to the elucidation of emotional instability in children, though to classify results on the bare *yes* or *no* answers to written questions invites neglect of personal observation Indeed, spurious simplification rather mars the book.

Unconscious processes are ignored by the author, and even if this is done for the sake of his readers there is little excuse for the omission of essential details from the account of Rivers's case of claustrophobia; no mention is made of the forgetting of the early experience so fully described by Dr Hollingworth, or the revival of the memory and the disappearance of the phobia

The jacket inscription says, "Never before has such a survey of the origin, course, and destiny of human life been undertaken in a single volume and in terms of established psychological knowledge" The book certainly does give an account of human behaviour from the intra-uterine life of the individual to the development of social institutions, with explanation and comment that are not beyond the scope of the general reader

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NEUROSYPHILIS.

La Syphilis Nerveuse By A. SÉZARY, Physician to the Hôpital Broca Paris: Masson et Cie. 1927. Pp. 208 3s 4d

WITHOUT pretending to cover the whole ground, Dr Sézary has written a series of what may be called essays in neurosyphilis, distinguished by the value of their subject matter as well as by a logical presentment and an easy and readable style Among these we have found the one devoted to the pathogenesis of parenchymatous neurosyphilis particularly useful, the arguments for and against the hypothesis of a neurotropic virus are marshalled and in turn discussed, and a definite conclusion unfavourable to the theory reached An essay on diffuse multilocular syphilis disposes of the view that there is more than a superficial resemblance between it and disseminated sclerosis We think Dr Sézary sound in his contention that the meningeal reactions accompanying parenchymatous neurosyphilis are effects rather than causes The chapters dealing with prophylaxis and treatment are equally enlightening and informative

On the whole, this is an excellent contribution to a subject of constant interest, and one to which we take pleasure in directing the attention of the *neurologist* and syphilologist

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NOUVEAU TRAITÉ DE MÉDECINE

Publié sous la direction de MM les Prof G-H ROGER, F WIDAL, et P-J TEISSIER Fascicule IX, *Affections du Sang et des Organes Hæmatopoiétiques* Paris Masson et Cie 1927 Pp 802 F 80

THIS represents one of the most important additions to standard works on hæmatology made in any language in recent years The general conception is admirable, and its execution has been placed in the hands of men all of whom have in various ways been responsible for advance in our knowledge of the blood and its diseases The edifice of the volume is firmly based upon the rock of morbid anatomy; the sections dealing with therapeutics have obviously been edited with judgment and discrimination The references show that the authors of every section have brought their material fully up to date, and have, moreover, taken ample cognisance of work done in other countries It is true that the crow of the Gallic cock is heard occasionally, as when M le docteur Aubertin attributes the advance in the knowledge of pernicious anæmia since the time of Ehrlich to "l'impulsion de l'école francaise," but it is not unduly strident

English and American authors are chidden for their confusion of splenic anæmia of the Banti type with splenic hæmolytic anæmia Dr Aubertin and Dr Léon themselves lapse in their omission of the familial type of splenic hæmolytic anæmia from their classification Apart from this omission the section is admirable On the other hand, the section on the lymphadenomatoses contributed by Dr Clerc must be termed unsatisfactory It is true that lymphadenoma and the lymphatic affections in general offer one of the most involved and obscure problems in medicine, but to attempt to consider such fundamentally diverse conditions as lymphadenoma of the Hodgkin type, multiple myelomatosis of the Kahler type, chloroma, myeloid sarcoma, and mycosis fungoides all under the same head can only lead to even worse confusion The section on the purpuras contributed by Dr Pagniez and Dr le Sourd is one of the best in the book It provides the first serious effort we have seen to bring together all the recently won knowledge on the nature and functions of the blood-platelets and their rôle in purpuric conditions The section on chlorosis by Dr Aubertin and Dr Mouquin, though containing no new matter, is a masterly presentation of the subject Altogether an admirable work

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AN INTRODUCTION TO THE THEORY OF STATISTICS

Eighth edition, revised By G UDNEY YULE London Charles Griffin and Co 1927. Pp 420 12s 6d

THIS text-book is so well known, and its merits have been so widely recognised by the attainment of an eighth edition, that our duty is discharged by commending it to all who want to acquire a working knowledge of statistical methods And this is an increasing number in the medical profession, seeing how much to-day not only the figures of population and of disease incidence but those of pathological findings and of therapeutic results are relied upon for the formation of definite conclusions The misuse of such figures is rampant among laymen, and many of our own profession are betrayed into statements about averages and means which persuade them to make general deductions, where even a superficial acquaintance with the theory of statistics would make them wary. In defence of medical men, it should be pointed out that statistics, as far as they concern the medical profession, form a particularly perilous weapon of argument For the quantitative data must always be affected by a multiplicity of causes The enthusiastic employers of statistical methods, when their significance has not been appreciated, are responsible to-day for a great many loose beliefs among the public, who rely unguardedly upon bold declarations having medical authority behind them but based upon no scientific familiarity with the employment of figures

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A SYNOPSIS OF HYGIENE

Second edition By W WILSON JAMESON, M.A, M D, Lecturer on Public Health, Guy's Hospital, M O H, Hornsey, and F. T MARCHANT, Senior Assistant, Department of Hygiene, University College London J and A Churchill. 1927 Pp 514 18s

THE first edition of this book appeared six years ago, the work has now been brought so well up to date that it is practically a new text-book It covers in 11 chapters the subjects of meteorology, water-supplies, removal and treatment of waste matters, ventilation, heating and lighting, housing, food, personal hygiene (including matters pertaining to maternity and child welfare), epidemiology, vital statistics, sanitary law, and chemistry and physics Two appendices contain much useful information We have failed to detect any serious errors or omissions. In a future edition some discussion on the importance of disinfection might be added to the description of various methods of disinfecting, and the desirability of spacing beds in dormitories or barracks in order to prevent the spread of cerebro-spinal fever should be stressed The last entry in the table of factors on page 491 requires to be corrected Throughout the book the reader is referred to recent articles either in current medical literature or in Government publications dealing with the aspect of public health under consideration, and is thus made to connect his text-book knowledge with current practice Altogether an excellent book which can be highly recommended to teachers and students of public health

Quantitative Analysis

By J Barker Smith, L.R.C.P. London Imperial Press Pp 16 1s.

In this small monograph the author provides simple and rapid methods for estimating various constituents in foods, alcoholic beverages, silk, coal, urine, and other substances Evidently an enthusiast, he has removed the difficulties inherent in such work by ignoring them entirely, with the result that those for whom the pamphlet is intended would in many cases be unable to distinguish the reliable methods from those which are of doubtful accuracy To the qualified analyst the work offers several suggestions, which with further development are likely to prove of value, and those interested in quaint expression will fully appreciate the text

JOURNALS

Journal of Pathology and Bacteriology Vol XXX, No 2 Pp 185–512 April, 1927 —Experimental Pneumococcal Septicæmia and Antipneumococcal Immunity, by H D Wright (London) —Observations on Trypanosomiasis of Rabbits and its Natural Mode of Transmission, by H A Channon and H D Wright (London) *Trypanosoma nabiasi* is common in wild and rare in hutch rabbits, it produces no ill-effects, the animals cure themselves of the infection and are thereafter immune Infection can be propagated by infected blood, but without any great certainty, rabbit fleas work more precisely and appropriate experiments lead the authors to conclude that rabbits get the disease naturally by eating infected fleas —Variant Colonies of *Staphylococcus aureus*, by J W Bigger, C R Boland, and R A Q O'Meara (Dublin) The colonies are by no means always typical, many are white instead of yellow and may also be abnormal in consistence and colony-shape The variations are to some extent inherited —A New Method of Preparing Staphylococcal Hæmolysin, by the same authors Very active preparations are obtained by emulsifying agar growths in saline and centrifuging —On the Pseudohæmolytic Streptococci isolated from the Sputum in Pulmonary Tuberculosis, by W M Cumming (Glenlomond) Sputum generally contains streptococci which are hæmolytic on primary blood-agar plates, some of these are genuine hæmolytic strains, but in the majority the broth cultures will not dissolve red corpuscles; serologically this *S pseudohæmolyticus* is quite distinct from the recognised forms, though it is not homogeneous —Phenol and Tricresol Effects in Toxin-Antitoxin Solutions, by C G Pope (Beckenham) In a very interesting study of the effects of temperature on the mutual solubilities of water phenol and serum proteins it is shown that freezing may lead to such a separation of strong phenol as will destroy the properties of proteids and, as antitoxin is destroyed more readily than toxin, lead to Schick mixtures becoming poisonous —Benign Polyp of the Œsophagus of Great Size, by S C Dyke (Wolverhampton) A monstrous mass extending from the level of the cricoid into the stomach —Some Uncommon Tumours, by C Powell White and C E Brunton (Manchester). Sixty-four micro-photographs from 26 cases of tumours which are rare or remarkable in one way or another —The Effect of Heat on the Agglutination of Bacterial Emulsions, by A. N Goyle (London) Technical discussion of the effect of heat on the different agglutinable substances in typhoid and Gaertner bacilli —The Value of Different Kinds of Antigen in Prophylactic Enteric Vaccines, by J A Arkwright (London); we comment on this paper elsewhere (p 883) —The Effect of Ultra-violet Rays on the Rous Chicken Sarcoma, by C F. W Illingworth and G L Alexander (Glasgow) The filtrable agent which causes the sarcoma survives a longer exposure to ultra-violet light than common bacteria. The radiation of filtrates does not differentiate between the "virus" and the "specific factor" of Gye —Periodic Examinations of the Streptococci of the Human Throat, by the late C Ilis Fox and D. M. Stone (London). Any one throat maintains its dominant type of streptococcus over long periods; catarrhs are associated with the appearance or increase of hæmolytic forms —The Influence of Cultural Conditions on the Production of Diphtheria Toxin, by A F. Watson and E Langstaff (Beckenham). Those who make diphtheria toxin for the preparation of antitoxin on a large scale often have great difficulty in ensuring a satisfactory product It is shown here that the materials from which the culture medium is made, its heating in sterilisation, and the access of air during growth are important factors, but others evidently exist and are at present beyond constant control.—Observations on Lamb Dysentery, by T Hare and E E. Glynn (Liverpool) This disease often kills a quarter of the lambs in the north of England and south of Scotland in the first five days of life Its occurrence is very puzzling and cannot be closely related to anything in the mother Crowding increases its prevalence The authors suggest that it is essentially akin to melæna neonatorum with perhaps a secondary bacterial infection —The Use of Wild Rabbit Serum in the Laboratory, by W M Cumming (Glenlomond) Better than that of tame rabbits —Scrotal Cancer in a Tamil employed on Antimalarial Oiling, by A. N Kingsbury (Singapore) A fresh example of oil cancer —*The action of Bacillus typhosus* on Milk, by C Gorini (Milan) With specially stimulative media milk is first peptonised and afterwards clotted

Reports and Analytical Records.

COW AND GATE MILK FOOD

(West Surrey Central Dairy Co, Ltd)

In our issue of Feb. 19th last we published an analysis of this food obtained by the employment of the Rose-Gottlieb method, this gave the fat content at a lower figure than was claimed by the West Surrey Central Dairy Company, and as it now appears rightly claimed. The company having pointed out that the well-known method used in our analysis could only be expected to give satisfactory results with liquid milks, the further analyses, whose results are set out below, were put in hand, the Werner-Schmidt method being now employed It will be seen by the figures in the new analyses that the statements of the manufacturers with regard to the fat content in Cow and Gate Milk Food are justified The following are the results of two analyses —

	No 1 Per cent	No 2 Per cent
Moisture	2 94	2 83
Ash	5 98	5 93
Fat	26 62	27 20
Proteids	27 85	26 46
Lactose	36 40	37 05
Total	99 79	99 47

The analyses indicate that the samples of dried milk examined have been prepared from full cream milk of good quality with no addition

We regret that in the previous report a product, which we have on former occasions commended to the favourable notice of our readers, should have been misjudged

The Tuberculosis Society —The annual meeting of this society was held on April 8th at Somerville College, Oxford The following were elected officers for the ensuing year President Sir StClair Thomson, Chairman of Council Dr Roodhouse Gloyne, Council Dr Gloyne, Dr G T Hebert, Dr H Gordon Smith, Dr A Neville Cox, Dr C J Faill, Dr H A Ellis, Dr F R Walters, Dr A Sandison, Dr E Ward, Dr G M Mayberry, Dr G B Price, and Dr Jane Walker, Hon Secretary Dr F J C Blackmore, Hon Treasurer Dr W Brand.

THE LANCET.

LONDON: SATURDAY, APRIL 23 1927.

DOCTORS AND LEASEHOLD REFORM

While the Government, Landlord and Tenant Bill was being given a second reading, two speakers commented on its mission to give protection or relief to the professional classes and in particular to the medical profession The first of the three parts into which the Bill is divided proposes to allow a tenant compensation both for any improvements he has made and for any goodwill which he or his predecessors in title have built up at the premises in carrying on a trade or business But this part of the Bill applies only to leasehold premises used wholly or partly for carrying on a trade or business, premises where a profession is carried on are expressly excluded Criticising this exclusion, Mr **Hugh Dalton** observed that there are many doctors, dentists, and other professional men who are just as liable as anyone else to suffer from a landlord's confiscation of their improvements or of the goodwill with which they have endowed the premises during their tenancy. He instanced particularly the doctors in the poorer parts of London who have built up practices and, when their leases come to an end, must either pay a grossly excessive rent or be turned into the street This complaint perhaps requires remedy rather hrough the Rent Restriction Acts than through he Landlord and Tenant Bill, but it is serious Dr **Graham Little** spoke of the consultants argely inhabiting a particular district of London, who should be given the benefit of the Bill, and also f the general practitioners who in some cases have een obliged to build on leasehold premises in order to comply with the National Health Insurance Act equirements in the matter of waiting-room accommodation and so on Mr A **Maclaren** said that rofessional goodwill was assessable in the case of robate duty or when a practice passed from one octor to another There is a good deal of subtance in his contention that a man may knock at a oor in Harley-street with some confidence that the ractitioners inside have a particular reputation Professional men have endowed the Harley-street eighbourhood with its special rental value, a fact which the Bill does not sufficiently recognise Replying at the close of the debate, the Solicitor-General expressed sympathy and hinted that the Bill could be amended in Committee Two years ago the Finance Act extended to the professions the income tax concession in respect of the wear and tear of plant and machinery which had previously been granted to trades and businesses A similar extension is required in the Landlord and Tenant Bill In the second part of the Bill, which contains general amendments of the law of landlord and tenant, there is no discrimination against the professional classes The chief proposal here is that which prevents the landlord from unreasonably withholding consent if a tenant wants to assign or sublet the premises The law courts already have favoured the tenant in the interpretation of covenants upon this point, Parliament proposes to go further

Our ancestors would be surprised to see the extent to which the Rent Restriction Acts and the present proposals interfere with the contractual relationship of landlord and tenant They might equally be surprised at the high rents now charged to professional men, at the herding of several consultants in a single house like the congregating of barristers upon a stair-case in the Inns of Court, and at the system by which the lessee of a house, by subletting rooms to other doctors, can sometimes manage to live rent free—a system which cannot but suggest to the lessor that he might fairly raise the rent of the house a little higher It is an open secret that those who prepared and approved the Government's Bill found it difficult to interfere with the law of leaseholds without initiating a disturbance of the rights of ownership which might have had far-reaching consequences They therefore proceeded with great caution One feature of the Bill, the handing over of disputes to referees appointed by Reference Committees, has been criticised as multiplying the occasions for litigation It is also criticised by the legal profession itself, which does not particularly love the creation of new tribunals which grew up towards the end of the war But the county courts which otherwise would furnish the proper forum for the decision of landlord and tenant questions are swamped by the flood of cases which the Workmen's Compensation Act, the Rent Restrictions Act, and other statutes let loose upon them It is possible that the new tribunals will be efficient, but a tenant may well find that what he saves from the clutches of his landlord he will surrender to the clutches of the lawyers

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TYPES OF RESPIRATION

We publish in this issue the third and last of the Lumleian lectures on the Muscular Mechanism of Respiration and its Disorders by Sir **Charlton Briscoe**, whose previous work on disorders of the thorax and its contents is sufficient to ensure him a respectful hearing The subject is one on which anatomists and physiologists have already spent much time and labour, but the Lumleian lecturer shows us that there remain problems for investigation which, although they may at first sight seem of small importance, are yet nearly as weighty as they are difficult The muscular mechanism of forcible respiration is pretty well understood and the numerous muscles which may take part in it—they include in fact a majority of all those of the body—have had their rôles assigned to them as muscles of inspiration or of expiration; but Sir **Charlton Briscoe** deals with more elusive phenomena and confines his attention to quiet respiration His prolonged and patient investigation of the action of the diaphragm led him to inquire into the mechanism of respiratory movements and of pain and dyspnœa arising in respiratory muscles Two types of respiration have long been recognised, the thoracic and the abdominal—or as the lecturer prefers to call it, the diaphragmatic, from the preponderant action of that great muscular mass in the latter type After eliminating as far as possible the confusing influences of those muscles which are concerned in maintaining the posture of the body as well as taking part in respiration, it was possible to study the details of the process clinically in man as well as experimentally on the lower animals—this latter research being undertaken by Lady Briscoe. It is interesting to find that Sir Charlton Briscoe rejects the long accepted view that the abdominal muscles are of great importance in respiration owing to their supposed action in pushing up the diaphragm during expiration, although he acknowledges their help in thoracic respiration. In quadrupeds the diaphragm is almost the only muscle active in quiet breathing, and although the conditions are different in man, in him also this muscle is credited with doing most of the work, aided, however, by the active contraction or postural tonus of others. Sir Charlton Briscoe holds the view, however, that if exaggerated, these actions "are not a normal use of muscle but an abnormal over-use, and in consequence a possible source of trouble." The muscles of thoracic and those of diaphragmatic respiration may even in certain circumstances be antagonistic and so hinder each other's action. Various causes, which are specified, may result in enhanced and persistent tonus in certain muscles, notably the scalenus anticus and that obscure and often ignored structure, the triangularis sterni. The lecturer considers that the long maintenance of postural tone leads to pain and tenderness owing, as he thinks, to the fact that, in the absence of alternate contractions and relaxations of muscle-fibres, the contents of the veins are not duly squeezed out nor the arterial supply facilitated. In the musculature of the lower limbs and the vertebral column no such symptoms are observed to follow the prolonged maintenance of postural tone in everyday life, and more information would be welcome as to the conditions necessary for their appearance in the muscles concerned in thoracic respiration.

If the hypothesis be accepted that the diaphragmatic type of respiration is normal in orthograde man as well as in pronograde quadrupeds, and that the thoracic type is abnormal and out of harmony with man's evolution, it is easy to understand that such an improper use of muscles might give rise to pain and symptoms. It may be asked, however, whether, in assuming the erect position, man has not so radically altered the conditions of respiration as to render doubtful the aptness of an analogy between him and his four-footed ancestors—if indeed his descent is to be traced through quadrupedal and not quadrumanous forbears. As Sir Charlton Briscoe has pointed out, the assumption of the erect position relieved the thorax of the duty of transmitting the weight of the head and forepart of the body through the forelimbs, and so gave the thoracic muscles much greater freedom to act in respiration. In conditions so profoundly altered it would surely not be unnatural for a change in the type of respiration to occur without the production of unpleasant symptoms. The lecturer does not advocate a return to a pronograde posture and four-footed progression, although he thinks that it may be useful as an exercise for children, just as a well-known German surgeon advocated and employed his "crawling" method in the treatment of scoliosis. But if we accept it as established that in certain cases the habit of thoracic respiration throws overworked muscles into tonic spasm, it may be conceded that such a fixation of the thorax, even if incomplete, may hinder the action of the diaphragm and at the same time become obnoxious to the patient through the sensation of pain either direct or referred. Sir Charlton Briscoe has found that by pushing the lower ribs towards the pelvis such symptoms may be relieved, and that re-education of the diaphragm is possible, with the help if necessary of mechanical means, such as strapping the lower chest, or better still, constriction with a narrow webbing belt. By one or both of these procedures he has succeeded in relieving symptoms arising in quite a variety of disorders. Among these were cases of neurasthenia, disorderly action of the heart, tachycardia, gastric pain, the pain of pleurisy and of pleuritic adhesions, obscure chest pain on exertion, dyspnœa, persistent basal bronchitis, chronic influenzal bronchitis, nocturnal retrosternal pain and anxiety, and even asthma. The nature of some of these complaints, and their diversity or identity of symptoms, must arouse reflections as to the importance of suggestion in the relief of pain of obscure origin, but whatever part it may have had in the cases reported by Sir Charlton Briscoe, the fact remains, and is to be reckoned with, that a number of sufferers have been relieved of more or less distressing symptoms. We hope that other clinicians will follow the teaching and in appropriate cases try the effect of the method of treatment which he has described.

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OPHTHALMIC BENEFIT.

A Departmental Committee is sitting to consider the Optical Practitioners (Registration) Bill which has been read in the House of Commons for the first time and to make recommendations. This Committee will benefit by the wide range of experience possessed by its medical members, Dr. H. B. Brackenbury, Mr. E. Treacher Collins, and Dr. C. O. Hawthorne. The correspondence on this subject which has been appearing in these columns for many weeks past displays well enough the conflicting views of prescribing opticians and ophthalmic surgeons. The prescribing optician claims to be better qualified for the work of testing the refraction than the average medical man and as well qualified for it as the average ophthalmic surgeon. To ensure this high standard they propose that a register of opticians should be established which should include only those possessing special qualifications which in the future are only to be granted to those who have undergone a technical training lasting three years, and including experience at special "refraction" hospitals. At present the fee for testing allowed by those approved societies that send their members to opticians is 5s. and as presumably these highly trained "optometrists" will be content with this fee, it follows that the approved societies, and through them their members, will reap the benefit of the difference between 5s. and 21s. under which latter fee the ophthalmic surgeon is not willing to do this work. The opticians further maintain that the number of medical men qualified to do this particular work is insufficient for the demand which will be made if the work is given to them alone. They also point out that in the past the bulk of this work has, as a matter of fact, been done by opticians, and they regard the ophthalmic surgeon, inasmuch as he claims to do refractions for everyone, as something of an interloper.

The ophthalmic surgeon's case may be put shortly thus. The average general practitioner does not undertake this work. The ophthalmic "panel" consists only of such as have had special experience in eye work and includes a large number of those who practise ophthalmic surgery exclusively (Mr ADRIAN CADDY in his letter says "practically all," but we believe this to be an exaggeration) There is no evidence to support the contention of the opticians that the number is insufficient and there is every reason to suppose that the supply will increase with the demand The prescribing of spectacles cannot be done with complete satisfaction except by those who have a knowledge of the body as a whole—i e by medical men and women. The advisability or otherwise of wearing glasses is in certain cases a matter which requires considerable judgment and cannot be decided solely by reference to the amount of refractive error Moreover it is not a matter which can safely be left to the decision of those whose interest it is to push the sale of glasses by every possible means Diseases of the eye are frequently dependent on diseases affecting the whole body. The claim made by opticians that they are as well able to diagnose a normal fundus by the ophthalmoscope as the ophthalmic surgeon can hardly apply to the great majority of opticians at present Those who go through the three years' course and obtain admission to the proposed opticians' register will form a limited body of men who, while nominally only concerned in the prescription and supply of glasses, are not very likely to be content with that. As they will necessarily have to diagnose many cases of disease and abnormality other than refractive errors, the tendency will be for them to occupy the position of an inferior and partially trained body of oculists

Hardly enough attention seems to have been paid to the point of view of the insured patient For him the question is whether, when his eye troubles him, he would rather see a man capable of diagnosing and treating any possible cause of the trouble or a man who is admittedly capable of dealing with only one of the possible causes He will not, we think, be much troubled by the propaganda on cigarette cards which will enable the "mere child" to arbitrate between doctor and optician[1] Undoubtedly what the patient wants is to see the best possible man, even if this means a rather larger fee to be paid by his society. Possibly the solution might be found in the direction of an option given to the patient himself, in order to get the best possible advice he might be willing to pay the extra fee involved in a consultation with an ophthalmic surgeon out of his own pocket when his society declines to do this for him In any case it is essential that the privilege of choice of oculist from among the existing panel be more effectively brought to his notice than is the case at present with many of those societies that have already adopted the scheme of the Ministry of Health with regard to ophthalmic benefit This is the more necessary in that whereas opticians can and do advertise, ophthalmic surgeons do not Mr ADRIAN CADDY suggests that the list of names on the ophthalmic panel should be available to the public in the post offices Certainly all practitioners on the ordinary panel ought to have it If at the same time the body which controls the names to be included in the ophthalmic panel could be made more authoritative the whole matter would be in the way of reaching a satisfactory basis

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[1] The Optician and Scientific Instrument Maker, March 11th, p 38

Annotations.

"Ne quid nimis"

GLASS FRAGMENTS IN PRESERVED FOOD

WHETHER food is better preserved in metal or glass containers has not been finally decided, there is much to be said on both sides Glass has steadily been growing in public esteem on account of its cleanliness and honest transparency, but metal containers facilitate sterilisation and are more easily rendered air-tight Dr. Gerald Leighton a medical officer of the Scottish Board of Health, went carefully into the matter a few years ago[1] Glass has now its advocate at the British Ministry It is not uncommon to see in the press accounts of the discovery of particles of glass in foods and beverages sold in glass containers, and sometimes the paper adds a comment on the dangers of this method of packing Now and then an action is brought against a firm of provision merchants for injury caused by glass fragments that have become mixed with the food Glass containers are so widely used to-day that any danger that may exist must threaten great numbers of people and the Ministry of Health have rightly ordered an inquiry into the matter. The report[2] of the investigating officer will amply reassure those who have been anxious lest their jam lunch tongue, or bottled beer should contain a sufficient quantity of glass to do them any harm Evidence in this country of injury from swallowing glass is extraordinarily rare, the four largest London hospitals denied having seen a case in five years. Moreover, powdered glass seems to be less noxious than is popularly supposed It has enjoyed great notoriety in tales of Eastern life as a slow poison, but according to all the testimony quoted in Dr Hancock's report it is readily enveloped by the food in which it is concealed and by the secretions of the stomach and intestine Sharp-edged and angular fragments of appreciable size may cause damage, but these are hardly ever present The largest particles are found in jam—3/8 in × 5/16 in. was the biggest—but although microscopic glass is present in most samples it is much too small and scanty to do any harm Strangely enough, the actual container is the least considerable source of glass particles It is generally made of very good material, and Dr Hancock's analysts were rarely able to trace any of the glass they found to the jar or bottle in which they found it Semi-automatic processes produce safer vessels than hand processes The commonest ways in which glass gets from the container into the food are the use of returned empties, some of which have jagged rims, the neglect of proper inspection during washing and filling; and the failure to observe precautions when containers are suddenly subjected to a high temperature, as when boiling jam is poured into them There is considerable risk of glass contamination in sweet (and therefore sticky) mineral water, for the breakages are 1 or 2 per cent and fragments are liable to stick to the rubber pad which surrounds the orifice of the rotary filler Unless these are wiped off they may get into the next bottle Bottles are generally "sighted" for glass before they are passed for sale The commonest source of glass particles is the dust of the factory which contains not only glass but vitreous slag The report is illustrated with some interesting microphotographs of samples prepared by Dr F Monier-Williams, of the Ministry of Health Laboratory. They show how the crossing of the Nicol prisms on the polarising microscope blots out the glass fragments while allowing the sand or crystal to remain visible Provided manufacturers use good glassware and exercise proper care little danger need be feared from glass-packed foods, but these conditions are essential to public safety

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[1] THE LANCET, 1923 i 1118

[2] Reports on Public Health and Medical Subjects, No 37 By George C Hancock, C B E., M R.C S Ministry of Health H M Stationery Office 1927 1s

HUMAN POLAR BODIES

Prof A F Dixon, of Dublin, has at last found a satisfactory polar body of a human ovum Some years ago Prof Arthur Thomson described what was probably a polar body in a woman's ovary, but the specimen was badly fixed and did not completely satisfy the histologists The fundamentalists will be discomfited They may be content that man should share his superfluity of naughtiness with mosquitoes, mandrils, and mammoths, but it must be very disappointing to have one assurance after another that he has not invented some peculiar mechanism of heritable reproduction known to himself alone, but proceeds along cytological lines of the most familiar type Anyone who is much more than momentarily interested in Prof Dixon's paper in the *Irish Journal of Medical Science* for April may well feel a little ashamed of himself; for if he is deeply moved by the discovery it means either that he is grossly anthropocentric or that he does not really believe in evolution As most of us look at everything from our own point of view, and as our faith is often weak, many will read the account and Prof Gatenby's comment with considerable attention

THE EPIDEMIOLOGY OF CHOLERA: A NEW CONCEPTION

THE significance of a difference of serological behaviour in organisms which are indistinguishable from one another in shape or in conditions of culture has long been a matter of dispute among pathologists The typing on serological lines of pneumococci and meningococci has not led to such striking clinical results as was at one time hoped, the agglutination tests carried out on the comma bacillus or vibrio of Koch, however, seemed to have a definite bearing on the pathogenicity of the vibrios At one time it appeared likely that the pathogenic bacilli alone showed specific agglutinability, and that those not possessing this power were not true cholera vibrios, though in every other respect indistinguishable from them Further investigations revealed the fact that sporadic cholera is very constantly associated with non-agglutinating vibrios A further complication is that no chronic carriers of agglutinating vibrios can be demonstrated, though spontaneous outbreaks of epidemic cholera have been observed to occur in many places where no history of immediate infection from any outside source can be obtained or be reasonably inferred A new conception of the epidemiology and endemiology of cholera was put before the Indian Science Congress, held at Lahore, in January of this year, by Dr J W Tomb and Captain G C Maitra They have since published their theory,[1] with a detailed account of the observations which led them to their conclusions In the first place, they observed that during the dry hot weather in the Asansol Mining Settlement vibrios were very numerous in the ponds or ground tanks frequented by the inhabitants of the Settlement for washing after defæcation When washing in these tanks was prohibited the vibrios gradually diminished in number and always disappeared after 12 to 14 days Efforts to isolate vibrios from the stools of those frequenting the tanks being a complete failure, the observers concluded that the ordinary peptone enrichment process for isolating vibrios from solid stools was unsatisfactory and after much experiment they devised an "open-bowl" method of cultivating vibrios from stools[2]

By means of this method they have been able to prove that in many parts of the mining settlement 35 per cent of the inhabitants are chronic carriers of non-agglutinating vibrios, though they have confirmed the absence of carriers of agglutinating vibrios noted by other workers The suspicion that agglutinability was a variable characteristic led to efforts to convert the non-agglutinating into the agglutinating types These proved inconclusive, but the reverse process was more encouraging Agglutinating vibrios in cholera stools permanently changed en masse after 12 to 14 hours into the non-agglutinating form when inseminated under natural conditions in a ground tank Laboratory cultures of Koch's vibrios changed into the non-agglutinating form only after 24 to 36 hours Dr Tomb and his colleague suggest that agglutinability is mainly an artificial property developed and fixed by laboratory cultivation Examination of the stools of epidemic cholera convalescents showed that 80 per cent of these convalescents became chronic carriers of non-agglutinating vibrios, the agglutinating form permanently disappearing from the stools within two to four weeks It has been a matter of common observation that during epidemics (due to agglutinating vibrios) non agglutinating vibrios invariably appear in great numbers in contaminated water supplies, the non-agglutinating vibrios disappearing pari passu with the disappearance of the epidemic

Dr Tomb and Captain Maitra conclude that the non-agglutinating vibrio (which is itself capable of causing clinical cholera) takes on the agglutinating characteristic under certain biochemico-physical conditions in the human intestine, the nature of which are at present unknown, and that this mutation or epidemic form is the cause of epidemic cholera Non-agglutinating intestinal vibrios in their opinion constitute the reservoir of cholera, both epidemic and endemic The theory is developed that the endemicity of cholera in any locality depends primarily upon the existence in the community of great numbers of (healthy) carriers of non-agglutinating vibrios, secondly, on the occasional conversion in the intestines of a proportion of these carriers—by some vital process—of the non-agglutinating vibrio into its mutation form the agglutinating vibrio, thirdly, upon the widespread and continued pollution of drinking water supplies with this mutation form through the unhygienic habits and customs of the people, and fourthly, upon the capacity of vibrios to persist or multiply in the drinking water supplies of the locality owing to climatic conditions, a vicious circle being thus established When once therefore cholera has been introduced into a community in widespread epidemic form, great numbers of chronic carriers of non-agglutinating vibrios remain—apparently for years—amongst whom cholera of the sporadic or the epidemic type may occur at any time, moreover, if drinking water supplies are habitually contaminated by the people then cholera will become endemic, provided that the climatic conditions are suitable for the survival and multiplication of vibrios On the contrary, where wholesale pollution does not occur, or where conditions are unfavourable to the persistence of vibrios in the drinking water supplies, cholera cannot become endemic; if epidemic outbreaks occur, they "fizzle out," as they are reported by Colonel Gill ordinarily to do in the Punjab during the hot dry weather[3] Dr Tomb and Captain Maitra predict that in the deltaic area of Bengal vibrios will be found to persist or multiply in the surface water supplies at the two periods of the year only when cholera is ordinarily epidemic there On the other hand, in the dry and arid regions of North-Western India the epidemic season of cholera is in general confined to the rains, since only during that season is there the necessary amount of surface water, as well as the necessary temperature (associated with the insanitary habits of the people) to make an epidemic of cholera possible Where the percentage of chronic carriers of non-agglutinating vibrios remains small, spontaneous outbreaks of cholera will be infrequent, and in such areas cholera, if it occurs at all, will be chiefly an imported disease The observers have been unable to ascertain by experiment whether or not the agglutinating vibrio immediately after it has lost agglutinability is still capable of conveying epidemic cholera, but from combined observations in the field and laboratory they conclude that the vibrio is capable of conveying cholera for some time after agglutinability has been lost, and a probable instance of this kind has been recorded by Chalmers and Waterfield[4] as having occurred in Gindha An additional factor, therefore, in the spread of epidemic cholera is the period of time which has elapsed between the contamination of drinking water with the agglutinating vibrio and its ingestion as a non-agglutinating vibrio by non-immunes.

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[1] Indian Medical Gazette, vol lxii, No 2 February, 1927

[2] Ibid, February, 1926, p 56, and November, 1926, p 537

[3] Gill, C A Indian Medical Gazette, January 1926, p 1

THE BEHAVIOUR OF APES.

THAT useful and interesting journal, the *Quarterly Review of Biology*,[5] so brightly edited by Prof Raymond Pearl, in Baltimore, does not seem to be as well known in this country as it should be, especially among busy professional men who like to keep in touch with biological progress The first number of the second volume contains, among other notable reviews, a summary account by Dr R M. Yerkes and Miss M. C Child of what is known of the psychology and behaviour of the anthropoid apes which will help those who visit the Zoo on Sunday afternoons to orientate and arrange their interests, perhaps to contribute to the analysis of the ways of animals It is only in the last 15 years or so that serious attempts have been made to study the orang, gorilla, and chimpanzee in detail It has been done partly in captivity and experimentally, partly in the open where Mr T. A Barns and Mr. Benjamin Burbridge have made particularly valuable contributions under conditions in African forests which must necessarily be difficult There is much of interest about the animals' special senses their sight, for instance, seems to be separated by a wide gap from human vision, and Mrs Kohts had some trouble to make sure that chimpanzees can differentiate colours at all Some of the most notable observations have been made by Dr W. Kohler at the anthropoid station at Teneriffe, he thinks it is certain that the chimpanzee exhibits a degree of intelligent behaviour which in man would pass as evidence of insight and reasoning calculation Of language proper they have none Emotions have corresponding vocal expressions, and the sounds may possibly represent racial feelings or ideas but never those of the individual

THE PULSE-RATE IN DIPHTHERIA.

IN the February issue of the *New Zealand Medical Journal* Dr. I M Allen describes his observations on the variations of the pulse-rate in diphtheria in a paper based on the study of 132 consecutive cases He distinguishes three forms of pulse curve In the first, which was found in the mild uncomplicated cases, the fall in the pulse-rate occurred on the same day as the fall in the temperature or on the day following In the second form the pulse remained rapid for some days or fell at a longer interval than usual after the fall of temperature This form was usually found when antitoxin treatment had been delayed and was regarded by Dr Allen as indicating (*a*) increased elimination, (*b*) stimulation, (*c*) increased protection by the injection of more antitoxin The third type of pulse curve was characterised by a fall below normal after the fall in temperature, until the tenth to the sixteenth day when it rose by 20 or more This secondary rise, which occurred in 50 cases, or in 40 per cent of the series, persisted from a few days to six weeks and was attributed by Dr Allen to intoxication of the heart muscle Unlike most clinicians, Dr Allen is inclined to regard the local condition of the throat as of little value in forming a diagnosis, as he found that 60 per cent of his cases could not be diagnosed in this way. He maintains that a faucial condition accompanied by a comparatively low temperature and a high pulse should be suspected to be diphtheria and treated accordingly The relation of the variations in the pulse-rate to prognosis is next considered, the occurrence of a secondary pulse rise unless of short duration being generally regarded by him as a grave sign Early treatment by subcutaneous or intravenous injection—sufficient doses of diphtheria antitoxin combined in cases of mixed infection with antistreptococcic serum—is recommended, but, strange to say, no mention is made of the intramuscular route which many authorities regard as the most desirable in the treatment of diphtheria.

SYNTHETIC THYROXIN IN USE.

WE noted a week or two ago[1] the Harrison award by the Chemical Society to Dr C R Harington for his brilliant isolation of the active principle of the thyroid gland, leading to the synthesis of an iodised tyrosine derivative with similar properties The *Edinburgh Medical Journal* for April publishes a report of the striking results obtained in two myxœdematous subjects with a synthetic thyroxin prepared by Dr Harington and Prof G Barger The metabolic activity of both patients increased immediately and rapidly, by 26 per cent in one case and 48 per cent in the other, after doses of 14 mg each This gives figures of 1 85 per cent and 3 43 per cent per mg compared with the 2 8 per cent of the Mayo workers using natural thyroxin Corresponding rises in temperature and pulse-rate and decreases in weight accompanied the rise in basal metabolism Synthetic thyroxin should be more dependable than the crude thyroid in use to-day, and cheaper than the active principle isolated from the gland

ANTITYPHOID VACCINATION

IT has generally been assumed that dead typhoid bacilli are more efficient as vaccines if they are killed as gently as possible and in particular with as little heating as is possible In the last number of the *Journal of Pathology and Bacteriology* Dr J. A Arkwright suggests that this idea needs reconsideration and that the variety of the bacillus is much more important than the details of the preparation of the vaccine He worked chiefly with four variants of *B paratyphosus* A and less fully with the similar forms of *B typhosus* He distinguishes forms which grow in smooth colonies and are motile, those that grow in rough colonies and are non-motile, smooth non-motile, and rough motile varieties Smooth variants, whether motile or not, are much more virulent than rough forms The antigen associated with flagella and present in smooth and rough motile forms is destroyed by heat and therefore can have little effect on virulence On the other hand, the antigen which resists boiling is found in both the smooth forms and is absent from both the rough forms—i e, it is associated with virulence Following this out by dosing guinea-pigs with vaccines made from the different variants and then testing the resistance of the animals to intraperitoneal inoculation of live cultures, he finds that smooth motile and smooth non-motile forms make efficient vaccines, while both the rough forms are of relatively little value; and that smooth vaccines are at least as effective after being boiled as after being killed with the minimum of heat Hence the heat-resistant element in the bacilli is the important prophylactic agent The confusion has arisen largely from so many of the previous observations which were intended to be germane to the question having been made by measuring antibodies in the blood rather than actual resistance; experimenters have assumed that antibodies were a measure of immunity and have shirked the trouble or been unable to face the cost of direct tests of resistance Using ordinary cultures containing various and unknown assortments of the variants which are now being sorted out, the agglutination test as usually performed measures the agglutinins which are developed in response to the heat-labile element in the bacilli, the part of the antigen, that is, which is now found to be unimportant Dr Arkwright's discovery may well open up a new and fruitful field in vaccination It needs confirmation, his data are numerically not altogether convincing, and would hardly satisfy the criticisms of the bacteriologists' way of dealing with statistical problems which were made by Prof W W C Topley in his Harben lectures[1] His test doses, too, were very large and perhaps poisonous rather than infective But he has certainly made out a case which is worth hopeful prosecution And until some provision is made for the study of the botanical bacteriology which ought to be able to tell pathologists all they want to know about variants and races of bacteria, it will rest with the pathologist to work out this extremely important question of variation as well as to apply the results to medicine

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[4] Jour Roy Army Med Corps August, 1918 p 161

[5] Quarterly Review of Biology London: Baillière, Tindall and Cox Yearly, about 600 pages 23s 6d

[1] THE LANCET, April 2nd, p 719

INFLUENZA AS AN ENTITY

Writers on influenza often express doubt whether any such disease really exists or whether the infinitely various symptom-complexes which are thus described by clinicians are not in fact unrelated Since we do not know the nature of the responsible organism, the doubt is legitimate and salutary There is, however, a good case to be made out for the clinical unity of the conditions which are given the general name of influenza or *grippe* In their deductions from a recent big epidemic in Germany, H Taterka and M Landsberg[2] classify the disease into five forms according to the depth at which the respiratory tract is invaded, these are the severe toxic, the pharyngotracheal, the bronchitic, the bronchopneumonic, and the pneumonic The clinical evidence which they adduce supports the view that the diverse symptoms are due to a single organism acting at different levels, and associated with kinds of secondary infection. The local inflammatory symptoms are to be interpreted, as in all infective processes, as evidence of resistance, and the fulminating or "severe toxic" form is that which occurs when immunity is so low that little local resistance develops A reaction at the pharynx produces nose-bleeding, sore-throat, and persistent cough; at the bronchial level it produces bronchitic and asthmatic symptoms, whilst in the lungs it produces pneumonia, with a large range of characteristic complications One of these is an infiltration which may be present without febrile symptoms and persists for a long time, another is a fibrinous pleurisy rarely seen in non-influenzal broncho-pneumonia Dry pleurisy is often, because of its painfulness, the most conspicuous symptom Pulmonary abscess, gangrene, interlobular empyema, pleurisy with serous and hæmorrhagic exudate, induration and the outbreak of tuberculous lesions are also fairly common complications Nervous symptoms have been reported, for instance two French writers[3] recently described a cutaneous hyperæsthesia, which they have noticed in constant association with the tracheal form of influenza The skin of the face and head and sometimes of the shoulders becomes very painful, the lacrymal secretion is increased, the sense of taste is lost, and the pulse-rate rises considerably. These symptoms point, fairly certainly they consider, to an infection of the trigeminal and upper cervical nerves, simultaneous with infection of the mucosa

Whatever organisms are concerned in its causation, many authorities, like Rudolf Jaffé,[4] are satisfied that influenza may be safely diagnosed on pathological and anatomical changes in the respiratory tract alone Not only, he says, are the local changes highly characteristic—e g, the formation of pseudo-membrane in the lower part of the trachea—but the whole picture is such a motley that no other disease can produce anything to compare with it This is especially true when the lungs are involved The frequent coexistence of apparently unrelated symptoms may be due to the various secondary infections which are present in most cases of influenza, and their very presence is often sufficient to settle the diagnosis

A FRANCO-BRITISH ANATOMICAL CONGRESS

A joint meeting of the Association des Anatomistes and the Anatomical Society of Great Britain and Ireland was held during last week in the Institute of Anatomy at University College, London The Association, represented by the President, Prof A Brachet, of Brussels, and about a hundred members, with their wives, were met at a reunion at the University of London Club, Gower-street, by Prof G Elliot Smith, the President, and members of the Anatomical Society, on April 10th A full programme of about 120 communications and demonstrations occupied the time of the actual joint meeting, which extended over the next three days The morning and afternoon sessions had crowded audiences and were carried on under the chairmanship of the two Presidents The communications, which were for the most part of a highly technical nature, will appear in due course in the special journals of the various countries to which their learned authors belong It remains to be said that the austerities of scientific congress making were relieved on the social side, where already the visiting ladies had been put under the advisory care and guidance of a small ladies committee The Zoological Society threw open its gardens to the visitors on April 11th and the Tower and Hampton Court received them on other days A conversazione was held at University College on the evening of the 11th, when the fascinating exhibits were completed by the rendering of some charming songs by Miss Carey Foster On April 12th a reception was given at the Wellcome Museum of Historical Medicine in Wigmore-street, and was largely attended On April 13th the visitors were entertained to dinner by the Anatomical Society in the senior common room at King's College On the following day many members of the Association availed themselves of Prof J T Wilson's invitation to visit Cambridge and see something of the work of the schools of medicine there During the whole period of the Congress there was an excellent exhibit of anatomical appliances, models, and books

REST HOMES FOR RHEUMATIC CHILDREN

The Metropolitan Asylums Board decided at its last meeting to provide further residential accommodation for the treatment of London children suffering from rheumatic diseases, subject to the sanction of the Ministry of Health This is to be done by extending Queen Mary's Hospital for Children, Carshalton, to the extent of 350 beds, in addition to the unit of 60 beds primarily intended for research purposes which were set apart at the beginning of last year Consideration was given to utilising the admirable country site at Copthorne, near East Grinstead, purchased in 1914 for the erection of a sanatorium, but this proposal was negatived on account of the high cost of installation where no public services are already laid down The new accommodation will be for children of both sexes under 16 years of age suffering from subacute rheumatism, the later stages of acute rheumatism, rheumatic chorea, or rheumatic carditis including recurrent attacks It is admitted that there are in London not less than 10,000 children who have suffered or are suffering from rheumatic symptoms, and in a recent report to the London County Council Dr F N K Menzies stated that there are from 600 to 700 children absent from school for long periods on account of rheumatism, representing in fact some 25 per cent of chronic invalidity amongst school-children The experiment of sending these children o ordinary convalescent homes has not proved uccessful, the parallel between the problem of the heumatic and tuberculous child is fairly close and dmission to recovery homes requires a careful basis of selection The urgency of a rapid expansion of accommodation in such rest homes or hospital schools has been emphasised by the Subcommittee on Rheumatic Heart Disease in Children, appointed by the British Medical Association whose second report[1] has just appeared, and in this report the policy of concentration is advocated Each city, it is suggested, should seek to develop a kind of hospital suburb or colony at the best site available, and part of this development would be the hospital school or rest home which should provide for the rheumatic child treatment as long as may be necessary in the best possible environment This policy is now likely to have its fulfilment for London at Queen Mary's Hospital, Carshalton In the meantime, until the necessary building is completed, 56 beds at High Wood Hospital, Brentwood, are to be allocated temporarily for the treatment of these children

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[1] Jour State Med, vol xxxv.

[2] Med. Klinik 1927, i., 389

[3] Bull de la Soc. Méd des Hôpit, March 24th, p 1866

[4] Med Klinik, March 25th, p 427

SILICOSIS AND THE HOUSES OF PARLIAMENT

A LAG is inevitable between the discovery of facts and their practical application Fifteen years have elapsed since the intimate association was recognised between inhaling silica dust in industry and a subsequent tendency to succumb to pulmonary tuberculosis, but in this country no definite campaign has been undertaken to abolish the silica dust risk, and with it one not inconsiderable group of deaths from tuberculosis So pronounced is the lag that we find the Government, through its Office of Works, embarking upon a contract, costing between three and four millions sterling and extending over some years, for refacing the Houses of Parliament with a freestone (Stancliffe stone) well known to generate toxic silica dust when worked The masons employed both at the quarry and on the buildings will be exposed to considerable risk

When the matter was raised in debate, the position was held that it was unreasonable to suggest that, while everyone else should be at liberty to use this particular type of sandstone, the Government should deny themselves the use of what was considered the most suitable and the best wearing stone that could be found for the purpose they had in view But surely the duty of Government should be first to set an example itself, and subsequently to interdict the use of so dangerous a stone The Ministry of Health spends ever more public money in its anti-tuberculosis campaign, and yet another Government Department chooses in the interests of architecture, it would appear, to expose a section of the community to risk Even from an æsthetic point of view the stone in question has little to recommend it for this purpose When it is used in an industrial atmosphere such as that of London, it turns a dull heavy black, which causes the onlooker to regret rather than to derive satisfaction from its lasting properties The Office of Works promises to take all precautions for the health of those engaged , the nature of the precautions are not stated Even if the new dust traps[2] for pneumatic tools could be adapted for stone carving, the masons appear determined not to use them Anyway the decision to use the stone was arrived at before any such palliative had been tried out It will be interesting to hear whether the Office of Works propose to adopt the preventive measures of the Miners' Phthisis Medical Bureau of South Africa, and to extend to the workmen about to be exposed to this unnecessary risk the provisions of the Workmen's Compensation (Silicosis) Act, 1918 Is it not possible, however, even at this late stage, to ask the architects to confer again, in the hope that some less dangerous material could be sought ? Portland stone was good enough for refacing Buckingham Palace

The Services.

ROYAL ARMY MEDICAL CORPS

Capt J W Pell to be Temp Capt , and temporarily relinquishes the rank of Capt

J W Dowzer to be Temp Lt

TERRITORIAL ARMY

C F Mayne, late Surg -Lt , R N , to be Capt

ROYAL AIR FORCE

E J T McWeeney is granted a short service commission as a Flying Officer for three years on the active list

Flight Lt (hon Squadron Leader) F E Wilson resigns his temporary commission

INDIAN MEDICAL SERVICES

The awards of brevets in peace-time is sparingly made and the honour is highly prized in the army The latest recipients of this distinction are Lt -Col A Spitteler, Commanding the Indian Station Hospital at Loralai, and Lt -Col J Norman Walker, the Viceroy's Surgeon

Dr Jamadar Abdur Rahim has been appointed Vice-Consul at Birjand in addition to his medical duties at Birjand Dispensary Lt -Col M MacKelvie has been appointed Civil Surgeon, Dacca, on return from leave Maj -Gen T H Symons, Surg -Gen with the Madras Government, has resigned his seat on the Council of State Maj S D Bilimoria has been appointed Asst Dir of Public Health, Ambala Circle, on transfer from the Military Department He relieves Lt -Col C A Gill, Asst Dir of Public Health, who has been holding this charge in addition to his other duties Maj K R Batra has been appointed Civil Surgeon, Kangra, relieving Maj H Chand Lt -Col Baird, civil surgeon, Allahabad, has been appointed Inspector-Gen of Civil Hospitals, United Provinces Lt -Col. Godfrey Tate, Inspector-Gen Civil Hospitals, United Provinces, has been appointed Surg -Gen , Bengal, vice Maj -Gen R Heard. Lt -Col G Hutchison officiates as Inspector-Gen of Civil Hospitals and Prisons, Assam Lt -Col C R O'Brien has been appointed Civil Surgeon, Mymensingh Capt S N Hayes has been appointed Professor of Midwifery, King Edward Medical College, Lahore, and Superintendent, Temporary Maternity Hospital, Lahore, vice Lt -Col R G Bott Lt G A Hill, Asst Dir of Public Health, Punjab (Technical) Epidemiology, has been appointed Asst Dir. of Public Health, Ambala Circle Dr C W B Normand has been appointed to officiate as Dir -Gen of Observatories, Delhi Lt -Col B R Dennis officiates as A D M S , Bombay District, vice Col Lloyd on leave

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ROYAL MEDICAL BENEVOLENT FUND —At the last meeting of the Committee 43 cases were considered and £563 voted to 39 applicants The following is a summary of some of the cases relieved

Daughter, aged 60, of M R.C S who died in 1894 Has supported herself as a housekeeper until recently, when her mother's ill health obliged her to give up her post They live in one room at a rent of 10s a week, the joint income amounting to £94 per annum Fund voted £24

Widow, aged 61, of M D Durh who died in 1910 Married only nine months when her husband died Has supported herself by nursing and taking boarders until last year, when, owing to ill health, she was obliged to give up flat , now lives in a bed-sitting room at a rental of 10s a week Receives £22 from investments and gifts amounting to £75 Voted £24

Widow, aged 36 of M R C S who was killed in an accident last year Left with two children aged 7 and 2½ Asks for temporary help until her late husband s estate is settled She is resuming her nursing and hopes to be able to manage later to support herself and children Voted £20

M D Durh , aged 70 Married One son, who is allowing his father £5 a month Has only made £50 from locums this last year, and was taken ill in June Through the kindness of a friend was given £150 for his own and wife's expenses and now asks for help during convalescence Voted £15

Daughter aged 60, of M R C S who died in 1899 Applicant and her sister left business some years ago to look after their aged mother To meet expenses they let part of their house and also took boarders Joint income investments £22 boarders, £129, letting £70 Mother had Old Age Pension and an Epsom Pension Rent and rates amounted to £75 Voted £26

Subscriptions may be sent to the Hon Treasurer, Sir Charters Symonds, at 11, Chandos-street, Cavendish-square, W 1

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[1] Brit. Med. Jour Suppl April 16th, 1927

[2] THE LANCET, 1926, ii , 344

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CCXX

TREATMENT OF VARICOSE ULCER.

Varicose ulcers owe their characteristics to the faulty circulation of the blood through the limb on which they occur. The dilated and inelastic veins allow the venous blood to stagnate and the defective blood flow causes malnutrition of the limb. The subcutaneous veins are generally most diseased and, therefore the skin and subcutaneous tissues suffer most, but the whole limb is affected to a greater or less extent as is shown by loss of tone of the muscles and ligaments and excess of extravascular fluid. In uncomplicated cases of varicose veins this defect of the circulation is only present when the foot is below the level of the pelvis, when the patient is horizontal, or the foot raised, the venous return is not impeded and there is a good circulation in the limb.

The faulty nutrition of the limb predisposes to indolent ulcer in two ways. (1) The skin becomes more susceptible to injury and infection. (2) The process of repair is hindered. When an injury occurs, and sometimes without a visible wound, the skin becomes inflamed and phlebitis and lymphangitis cause occlusion of the vessels and still further impairment of the circulation. There is no direct connexion between the extent of the varicose veins and the susceptibility to varicose ulcer. A patient may have large varicose veins and yet maintain a good enough circulation to keep the skin healthy, while a patient with little apparent varicosity may have serious malnutrition of the skin. Phlegmasia alba dolens and thrombosis of the femoral veins may lead to lesions that are indistinguishable from varicose ulcer.

When an ulcer has appeared secondary changes are set up. Septic infection occurs in the skin and surrounding tissues and they become hard, œdematous, and inelastic; cicatrisation, the extent of which depends upon the severity of the septic infection, leads to further impairment of the circulation and delay in healing. Long-standing and improperly treated ulcers may cause these secondary changes to affect the skin and subcutaneous tissues of the whole circumference of the limb and to extend from the knee to the foot. The infection may spread through the deep fascia by the veins and lymphatics causing adhesion of tendons to their sheaths, myositis, periostitis and occlusion of the deep vessels, and trophic changes in the foot. Varicose ulcers are not, as a rule, painful. Pain is generally a sign of phlebitis or inflammation under the deep fascia.

Varicose ulcers have to be distinguished from indolent ulcers occurring in a scar which is surrounded by healthy skin; infective ulcers such as those due to syphilis, tubercle, &c., ulcers associated with disease of the underlying bone, and carcinomatous ulcers which are generally, but not always, due to malignant changes in an old neglected varicose ulcer.

Preventive Treatment.

All patients with varicose veins should sleep with their feet raised above the level of the pelvis. This is most easily effected by placing under the mattress a skeleton wooden wedge the same width as the bed, seven inches high at the bottom and increasing to nothing at the level of the patient's hips. Such a wedge can be easily made of wooden laths fastened to two triangular pieces of wood. No other treatment is needed, unless there are signs of defective circulation such as atrophy of the skin, œdema after standing, and loss of tone of muscles and ligaments. If these signs be present the patient should be advised to lie with the feet raised for an hour in the middle of every day, and to wear a support such as crepe bandages or a well-fitting elastic stocking reaching from the toes to half-way up the thigh. The stocking should be made in two parts, one reaching from the toes to the tubercle of the tibia, and the other from the middle of the thigh far enough down to overlap the upper edge of the lower part. If the stocking is in one piece it constricts the veins about the knee during movements of the limb. The support should be put on each morning before the leg is put out of bed—i.e., before the veins become distended with blood.

Small Early Ulcers

Any graze, pustule, or inflammation of the skin, no matter how apparently trifling, should be regarded as serious if it occurs in a limb that shows signs of defective circulation. The patient should be advised to lie up entirely with the foot raised until the lesion is healed. The sepsis should be treated with warm boric compresses, which should be always moist and not applied too hot, the skin being easily injured by heat. When the ulcer is clean it should be covered by a dressing that does not require changing too often. Even the most careful dressing tends to damage the newly formed epithelium. Unna's paste, to which 1 part in 16 of boric acid or 1 part in 8 of balsam of Peru has been added, is a very satisfactory dressing. In these small ulcers it does not need changing more than once a week, the ulcer will generally heal in a fortnight.

When the ulcer is healed it is advisable for the patient to lie up for a further week or more, according to the size and thickness of the scar, and during this time gentle massage vibro massage, and radiant heat (not more than 180° F.) are valuable aids to getting a healthy scar. When the patient gets about again the preventive treatment outlined above should be carried out. It is not advisable to perform any of the many operations on the veins that have been suggested. None improves the circulation in the limb and many make it worse.

Large or Chronic Ulcers

In these cases the secondary changes referred to above are always present. For this reason the methods of treatment that would be applied to large and chronic ulcers elsewhere are not applicable. If the ulcer be excised its site will still have the imperfect circulation that is the initial cause of the condition; and for the same reason sliding flaps and tube grafts give unsatisfactory results. The treatment should be directed to prevent further impairment of the already defective circulation by extension of infection, and to promote rapid healing with minimal scar formation. The patient should rest with the foot elevated, warm boric compresses being applied until the ulcer is clean and the erythema has subsided. This does not generally take more than a few days and then, if the granulations are bright red and healthy in appearance, healing can be hastened by covering the surface of the ulcer with Thiersch grafts, which should be taken from the arm rather than the thigh, the blood-supply of the latter often being impaired. The grafted ulcer can be covered with a dry gauze bandage, which should not be moved for five or six days. When the grafts have taken Unna's paste or a mild antiseptic dressing should be applied, and not changed more often than necessary.

If the ulcer be very slow in cleaning or if the skin at its edge forms a hard dense fibrous ring, the granulations are generally purple in colour and pulpy and unhealthy in appearance. Such an ulcer may be curetted and the fibrous ring removed. To do this properly an anæsthetic is necessary, and all the tissue down to the deep fascia should be removed. Boric compresses are then applied until healthy granulations form, and these may then be covered with grafts. This method of treatment takes a long time, often many weeks, and it is only successful in a proportion of the cases in which it is tried. Healing may be hastened by ultra-violet radiation, given as a graduated general body bath, during the period of cleaning the ulcer concentrated local applications of ultra-violet radiation may be given, but only minimum doses must be given since the poorly nourished skin readily vesicates

The patient should be kept at rest after the ulcer is healed, and the scar treated in the same way as those of small early ulcers Freedom from recurrence depends largely on the length of rest after healing and on the care with which after-treatment is carried out

Intractable Ulcers —If the ulcer has been present or recurring for many years and is situated in a large area of discoloured indurated skin, and particularly if the deep structures have been affected to such an extent that the ankle is almost fixed, it is often not worth while to undertake the many months treatment necessary to heal such an ulcer The resulting scar breaks down almost as soon as the patient gets up, and returns to the same condition as when treatment was started Such ulcers should be treated by the ambulatory method, the object then being to prevent them from getting worse rather than to persuade them to heal

Amputations —In cases in which suppurative phlebitis has occurred below the deep fascia and the ankle is fixed by matting of the surrounding structures, it is often impossible to get the ulcer clean, and no treatment will obviate the necessity of frequent dressings The inconvenience of this and the crippling resulting from the deformity may be so severe as to make amputation necessary It should be performed through the lower third of the thigh; the badly nourished tissues below the knee make a poor stump

Ambulatory Treatment

Patients are often unable to lie up for the time necessary to heal a varicose ulcer There is then always a serious risk of development of the secondary changes above referred to, even if they are not already present It is difficult to impress on patients the seriousness of what appears to be a slight graze or septic spot, but they must be made to understand that it is only by prolonged and careful treatment which they themselves must conscientiously carry out, that they can be spared a lifelong disability The preventive treatment outlined above should be adopted and the ulcer cleaned by boric compresses — a long week-end in bed is a great help in doing this. Unna's paste should then be applied from just above the malleoli to the tubercle of the tibia (no matter how small the ulcer may be) and this should be changed about once a week Crepe bandages or an elastic stocking should then be put on over the dressing.

Note on the Application of Unna's Paste

Zinc and gelatin paste of the B P C (commonly called Unna's Paste) is often wrongly applied The container should be stood in water just warm enough to melt it (about 100° F), and a bandage three inches wide prepared of a roll of white gauze four layers thick, or of soft crinolin quite free from starch or dressing The ulcer to be dressed should be clean, and the skin around should be washed and dried by a spirit lotion which should be allowed to evaporate The part to be covered should then be painted with a thick coat of the jelly, by means of a brush or cotton-wool swab, and immediately covered by a single layer of the bandage, which must be evenly and firmly applied It should be applied firmly enough to make the jelly bulge through its interstices, and to avoid creases and ridges in the bandage it may be cut into lengths as often as necessary as it is bound on Another thick coat of jelly is applied and then another layer of bandage until about six layers are in position Nothing should be allowed to touch the dressing until it is firmly set It may then be covered with a light bandage, unless the patient is going to wear a crepe bandage or elastic stocking over it To remove the dressing it should be saturated with warm water

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Special Articles.

AN OUTBREAK OF TYPHUS.

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General

A SMALL outbreak of typhus occurred in Glasgow during the later days of July and the first two weeks of August, 1926, and for several reasons certain of its aspects are worth recording

The disease has not appeared in epidemic prevalence in this country since the middle of last century, and its gradually diminishing incidence within recent years has given rise to a general impression that the disease is smouldering before total extinction The low incidence is reflected in the very few references to the disease in recent British medical literature, and what references there are relate chiefly to epidemics in Eastern Europe Typhus was present in many Eastern European countries during and immediately after the war, and spread as far westwards as Holland, Spain, and Portugal The distribution of the disease in Britain is interesting, and Table I shows the number of cases of typhus and the number of areas affected for each year since 1919, when the disease was prevalent in Europe :—

TABLE I —*Typhus in England (E) and Scotland (S) (1919–25)*

—	1919		1920		1921		1922		1923		1924		1925	
	C	Aa	C	Aa	C	Aa	C	Aa	C	Aa	C	Aa	C	Aa
(E) ..	3	1	—	—	—	—	13	4	1	1	8	1	—	—
(S)	38	4	74	5	1	1	20*	4	2	1	—	—	14	1

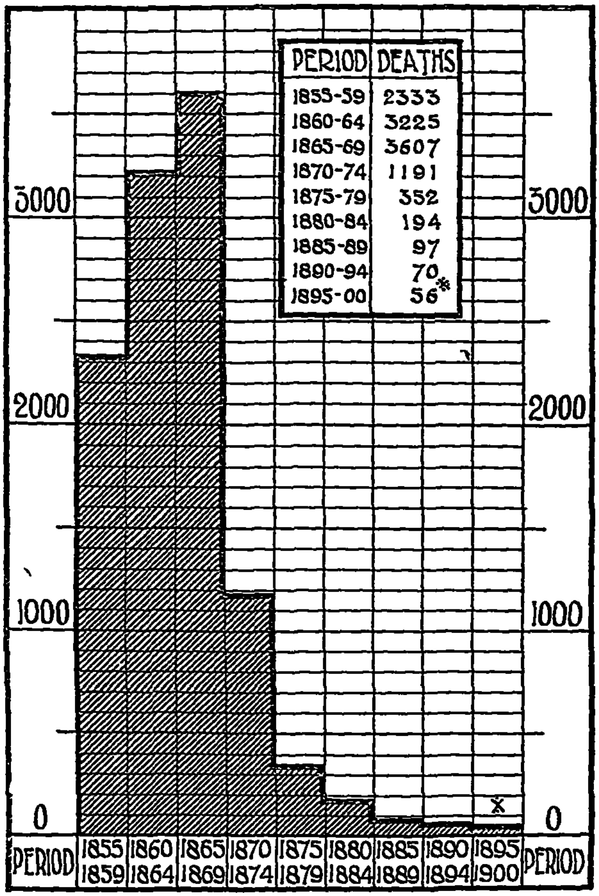
C =Cases Aa =Areas affected

* This figure does not include an outbreak of typhus in the Isle of Raasay, Skye

A prominent feature of Table I is the relatively low incidence of the disease in England compared with Scotland during the years 1919–25 inclusive Another feature is the distribution of infected areas in those years when typhus was more highly prevalent In *Scotland*, since 1919 these areas are representative chiefly of the west of Scotland, the majority of cases occurring in Glasgow, Greenock, and Paisley In 1925 the 14 cases reported were confined to Greenock. Since the outbreak in Glasgow during August, 1926, cases of typhus have been reported from Dumbarton, Port Glasgow, and Stranraer, towns situated in the south-west of Scotland In *England*, the two outbreaks since 1919 have occurred in the north-western district In 1922, out of 13 cases reported in England, Birkenhead was responsible for 11 cases An outbreak in England in 1924 comprised eight cases occurring in St Helens It is remarkable that the distribution of typhus during the period 1919–26 has been along the western seaboard of Britain, and with the exception of the outbreak in Skye during 1922, has been confined to the south-west of Scotland and north-west of England The proximity of these districts to Ireland—a recognised endemic centre of typhus—may explain the appearance of the disease in these parts.

The intimate association of typhus with overcrowding, hardship, and poverty arising from causes such as war or famine has been recognised since early times, but it is now realised that these factors are only contributory to the part played by body vermin in the transmission of the disease There exists in this country the mechanism for the spread of the disease, and it would appear that only the infecting virus, whose presence is represented by the above-recorded outbreaks, is necessary to produce an epidemic of the disease The early clinical recognition of the disease and a full appreciation of the part played by body vermin in the transmission of the infection are the important factors in the control of typhus

FIG 1.



Graph showing typhus fever in Glasgow Total number of deaths in five-yearly periods from 1855–1900 Six years are included in the period indicated by an asterisk.

So few are the cases occurring in Britain that many medical practitioners are unacquainted with the clinical manifestations of the disease In addition, sporadic cases of typhus, like other infectious diseases —and notably cerebro-spinal fever—are atypical and lead to difficulties in diagnosis, the disease tending to breed true only in epidemic periods These facts suggest sufficient reason for publishing the following notes, for the undiagnosed or missed cases of typhus is frequently the cause of the appearance of the disease in epidemic proportions The outbreak in Glasgow was confined to eight cases, and five of these were admitted to hospital before the development of the rash, two others on the first day of the rash It was therefore possible to study the disease from its earliest stages, which permitted of a complete and detailed survey of the clinical features Certain important laboratory investigations were also carried out

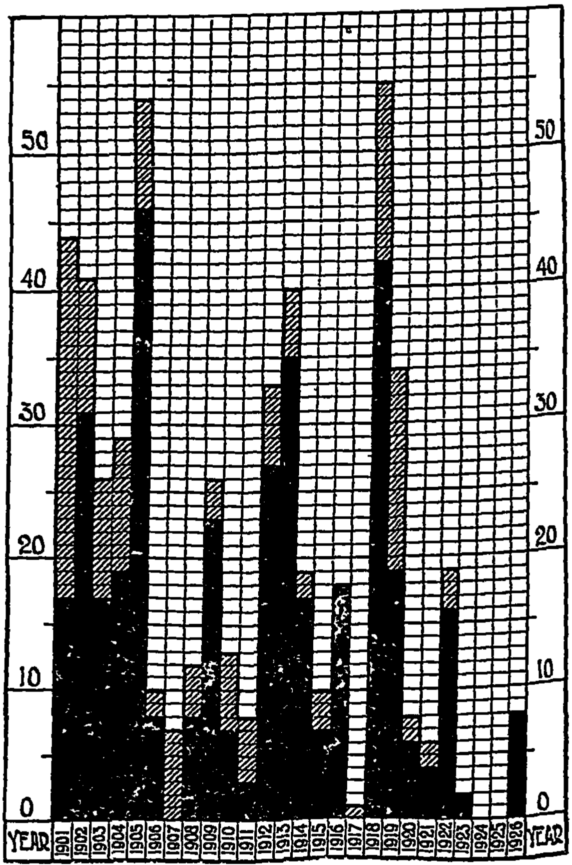
History of Typhus in Glasgow.

In 1818 Glasgow—a manufacturing city of 145,000 inhabitants—experienced its first great epidemic of typhus The disease reappeared in epidemic prevalence in 1837, 1847, and in 1851–52 After the last of these epidemics there was a period during which the disease declined in the city, and admissions for fever to the Royal Infirmary in 1859 were fewer than in any of the preceding 35 years, notwithstanding the enormous increase in population during that period. Reliable statistics relating to typhus are available since 1855, and the history of the disease in the city since that year may be divided into two parts—namely (1) 1855–1900, and (2) 1901–26

(1) (1855–1900) —While the actual numbers of cases occurring during the earlier years of this period are not known, accurate statistics of deaths from typhus since 1855 are available The figures form a fairly accurate picture of the incidence of the disease since that year, and the deaths are shown in five-yearly periods on Fig 1 This graph shows a definite and sustained diminution of the incidence of the disease in the city

In the 'sixties of last century the whole "Sanitation" energy concentrated on a struggle with typhus, and hospital accommodation was first provided by the municipality as a counter attack to the ravages of the disease In 1865 the first Municipal Fever Hospital was established for the isolation of cases of typhus, and from Fig 1 it will be seen that following the quinquennial period 1865–69 a definite reduction in incidence of the disease occurred This reduction was not wholly due to the isolation of the patient, but also to the administrative measures taken to prevent overcrowding, which resulted in a higher standard of personal and domestic cleanliness Typhus had therefore occurred in extensive epidemics in the city during the nineteenth century, although for the last 25 years of that century the disease showed no tendency to assume large epidemic proportions

FIG. 2.



Graph showing cases of typhus fever in Glasgow for years 1901–26 Grouped cases indicated in solid black

(2) (1901–26) —During the period 1901–26 the disease continued to show a low incidence in the city,

and on Fig 2 the *actual cases* occurring in each year are represented It is necessary to explain that the city extended its boundaries to include adjacent burghs in 1912, so that the incidence of the disease after that year is calculated on a much increased population and is not comparable to the incidence preceding that year Until 1924 typhus was endemic in the city, but during the years 1924 and 1925 no known cases of the disease occurred in Glasgow The period of freedom of the city from this infection was actually longer than two years, for the two cases registered in 1923 occurred in January of that year, whereas the 1926 outbreak occurred in August—i e, three and a half years afterwards In the graph (Fig 2) the grouped cases are shown in black, whereas sporadic cases are represented by shaded areas A group of cases consisted of two or more cases associated with one another The highest number of cases occurring in one group was 14 during the year 1918 Each black area on the graph may represent several small groups of cases; for example, in 1910 there were two groups of infection in April followed, not until four months later, by isolated single cases in districts widely separated, in 1912, of the 43 cases registered, 23 *occurred in four separate foci, but* in the same group of streets These outbreaks were no doubt inter-related, although inquiry failed to demonstrate any association Later in this year there occurred cases in three families not associated with the former cases or with one another; in 1913 six areas in different parts of the city were affected, four of which were found to be associated In the case of two areas there was no connexion, although there was the suggestive fact that the original case was a dealer in old clothes, and, in 1918, there were eight groups of cases occurring at different periods throughout the year The first group consisted of 14 cases in the same district and spread over a period from the end of January to the end of March of that year These eight groups of cases occurred in different parts of the city

In the specific years mentioned above typhus occurred in small groupings of cases at different parts of the city and also in sporadic form Although these years have been mentioned as examples the same picture of the disease presents itself in nearly all the other years forming the period 1901–26 During this period 87 groups of cases occurred in Glasgow, and Table II shows an analysis of the diagnosis of the first cases in each group —

TABLE II

Typhus	51	Other diseases	9
Enteric fever	22		
Pneumonia	5	Total	87

In 36 groups therefore, the diagnosis of the primary case was missed The chief difficulty was apparently to distinguish typhus from enteric fever The nine cases classified in the table under "Other diseases" comprise two cases of influenza, two of scarlet fever, one of nephritis, one of diphtheria, and three notified as "Undefined fever"

History of the Outbreak

This small outbreak of typhus was limited to eight cases and occurred in one of the lower working class districts of Glasgow Seven patients, including the first recognised case were members of the same family six of whom resided in the same house, the seventh being a married daughter who frequented the house, but lived some distance away The eighth patient, a friendly neighbour, had nursed the first recognised case prior to his admission to hospital

The first reported case, G B a male, aged 25 years, had been admitted to a general hospital on July 29th, 1926—his eleventh day of illness—with a diagnosis of nephritis He had a history of headache, joint pains and a mild delirium of two days' duration A rash was present on admission and a suspicion of typhus raised He was transferred to Belvidere Fever Hospital for observation In this institution he was restless and talkative with dry furred tongue and an offensive breath due to oral sepsis The pupils were not contracted and reacted smartly to light and on accommodation, and there was no suffusion of the eyes The facies did not suggest the "bloated" facies of typhus There was a generalised petechial rash of a *bright-red* colour with some subcuticular mottling It was extensively distributed over the trunk, arms, and legs but exempted the face On the hands and feet it presented a purplish appearance, but even there the elements were discrete. The rash could not be regarded as absolutely typical of typhus and the constitutional disturbance was not in proportion to the extent and intensity of the eruption Some nuchal rigidity and a slight but definitely positive Kernig sign suggested a meningeal condition Lumbar puncture gave a slightly turbid fluid under normal pressure, which, when examined, showed an increase of globulin and a cellular exudate consisting more of polymorphs than lymphocytes, but no organism was found The urine contained albumin but no other abnormal constituent The case was doubtful clinically, but the Weil-Felix reaction was positive

When the suspicion of typhus was raised the patient's home was visited

Two members of his family a girl, aged 18 years, and a boy, aged 10 years, were suffering from headache and malaise, they were removed immediately to Belvidere Hospital for observation The house of a married sister, aged 25 years, was visited and this woman was confined to bed with headache and a slight temperature She also was removed to hospital for observation The remaining contacts from both houses were transferred to a reception house On July 31st—i e, the day following the admission of the above four cases to hospital—two sisters of the original patient, aged 14 years and 13 years were transferred from the reception house to Belvidere Hospital These children were apparently well, but had developed elevations in temperature On August 1st another sister of the first case, aged 20 years, a maid in a local hospital, was admitted to Belvidere Hospital with a temperature of 101° F and an early suspicious rash One of the numerous contacts kept under observation was admitted to hospital on August 6th with a temperature of 103° F and a slight rash This eighth patient was a woman, aged 50 years, who had been in direct contact with the original case, having nursed him before his admission to hospital

All the above cases showed definite evidence of typhus several days after admission to hospital

Source of Infection

Extensive inquiries were made with a view to tracing the source of infection of these cases, but no definite conclusion was reached

The history of previous illness in the family revealed a few suggestive circumstances which could not be entirely dissociated from the later appearance of typhus in the household

The father of the family, aged 50 years, died in a local general hospital on July 16th from an illness whose nature was somewhat obscure This illness commenced with rigor, headache, and sickness, on admission to hospital on July 5th the patient was semi-comatose and complained of violent occipital headache There was some rigidity of the neck, contraction of the pupils, and congestion of the face The reflex responses were sluggish and there was a positive Kernig sign From the date of admission to hospital to the date of death there was no evidence of rash and no cases of typhus occurred in that hospital From post-mortem examination the cause of death was certified as "pneumococcal meningitis" In addition, the mother of the family had also suffered, but had recovered from an indefinite illness lasting eight days During the earlier part of June she had been confined to bed with *occipital* headache and sickness A Weil-Felix blood reaction in her case was negative, but this test was performed six weeks after the onset of her illness There had been no illness in the family antecedent to that of the mother

It is difficult to dissociate the illness of the father from the definite typhus from which seven of the family suffered

From an administrative point of view the illness of the father was treated as typhus No definite information of the deceased father's movements could be obtained The mother stated that he had been unemployed and had never been away from the district where he lived The movements of the mother and of the first recognised case did not assist in detecting the source of infection None of the family had been outwith Glasgow, and so far as is known no member had been in contact with a case of typhus The last known case of the disease in Glasgow *occurred in* January 1923, and in another district of the city It has been suggested that the virus of typhus may pass through generations of lice and reproduce the disease in the same locus at different times In this outbreak the infected houses were situated in streets which had not previously been infected The nearest previous case of typhus occurred in an adjacent street in February, 1922 —i e , four and a half years previously—and there was no association between the family infected in 1922 and the family infected in August, 1926

Glasgow and Ireland have been intimately related in the history of typhus In the 1846 epidemic affecting the larger cities of Britain, there is abundant evidence that the disease was imported from Ireland In 1913 the outbreak in Belfast was associated with the sale of old clothes imported from Glasgow where several cases of the disease had occurred Again, Greenock has been an endemic centre of the disease for several years The source of infection in the Glasgow outbreak of 1926 is obscure and has no relationship, at least, to Dublin or Belfast The last case of the disease in Dublin occurred on April 30th, 1926, and was a contact from a neighbouring urban district, whilst no cases of this infection have occurred in Belfast for several years

Clinical Notes on Cases

These notes are a summary of a comprehensive study of eight cases of typhus The extensive literature on the clinical aspects of typhus in this country deals with the disease as it occurred a decade or more ago No marked change in type falls to be recorded, but bearing in mind the wide variations in the types of other infections which have occurred in a like period, a brief portrayal of the clinical picture of the present series may not be amiss

Age —In the family of seven the ages ranged from 10 to 27, and the eighth case was a woman aged 50

Sex —Two of the patients were male and six female

Stage of Invasion —The fever was ushered in with rigor and severe frontal headache in two cases Two other patients complained first of headache, backache, generalised pains, and an " out-of-sorts " feeling not sufficient to confine them to bed for two to three days, while in the two youngest patients the first evidence of infection was an elevation of temperature The headache and backache persisted during the invasion stage and was frequently accompanied by nausea and sickness Nervousness amounting to hyperexcitability was noticeable in the younger cases

Rash

(*a*) *Description of Rash* —The rash appeared on the fourth to sixth day of illness, except in one case where it was noted on the second day of pyrexia It consisted at first of pinkish-red maculo-papules, chiefly intradermal and just appreciable to the finger One case (M B , 15 years) had a papular eruption on the wrists and both palmar and dorsal aspects of the hands comparable to the papular eruption of small-pox. The maculo-papules later became more macular and of a larger size with an irregular margin fading into the surrounding skin The pinkish-red colour of the rash at this stage resembled more the rash of rubella than that of measles The spots faded readily on pressure, varied in size and shape, tended to become more profuse and confluent on the extremities and back, and remained more discrete and smaller on the abdomen, where the lesions were brighter and stood out well against the whiter background Later lesions of indefinite outline and more purplish in colour developed in the deeper layers of the skin Subcuticular mottling aptly expresses this appearance In the progress of the exanthem there was a gradual recession of the rash into the deeper layers, as shown by the successive stages of papule, maculo-papule, macule and subcuticular lesion

(*b*) *Colour of Rash* —The colour varied from bright reddish-pink (maculo-papules) to more delicate pink (macules), while the subcuticular lesions were more purplish in hue Later the macules became dull reddish-brown, were more injected, and disappeared less readily on pressure In the more severely ill patients petechiæ developed in the centre of pre-existing macules The purplish, subcuticular element was best appreciated on the extensor aspects of arms and legs and in the flanks The rash gradually faded, became dirty brown in colour, showed no tendency to desquamate, and at this stage was difficult to differentiate from the staining of a scarlatinal erythema or other intense eruption. Later, such elements as remained were isolated brownish spots, not unlike freckles There was a tendency, most noticeable in the milder cases, for the rash to vary in intensity from day to day and even from hour to hour

(*c*) *Distribution of Rash* —The papulo-macules were first noted on the abdomen and, scantily, on the chest Soon after they appeared on the entensor surfaces of the forearms, where the eruption early became quite profuse and was present there even when the rash generally was quite scanty The rash spread rapidly to the lower limbs, the lesions being most profuse on the buttocks and along the anterior and extensor surfaces of the legs, and in the course of six to eight hours it had covered the whole body, exempting only the face The areas most extensively involved were the back in the interscapular region and, in the female, the breasts, particularly around the nipples and in towards the axillæ, down the sides, above the iliac crests, and extending laterally towards the lumbar region , on the limbs, the buttocks and extensor aspects of the forearms and legs were most affected. The upper arms, the groins and axillary folds were but little affected when the rash was scanty This is scarcely in agreement with the usual teaching In one patient papules were noted on the forehead and neck, spreading over the angle of the jaw to the cheeks

Relationship of Intensity of Rash to Age and Severity of Illness —Generally speaking, the younger the patient the less intense was the rash. In the case of W B (male, 10 years) the rash was evanescent, lasting only two days, varying in intensity during that period, and leaving very little staining In J B (female, 13 years) the rash was generalised and well developed, but less confluent than in the older patients and tended to fade more quickly with less staining and no petechial elements The most intense rash was that of the original case who certainly was not the most ill of the patients In his case the eruption was much brighter and more hæmorrhagic than any of the others and naturally persisted longer Petechiæ were noted in Mrs E R (female, 25 years) and S B (female, 20 years), both of whom were extremely ill The prognostic value of the hue, brighter in more favourable cases, dusky and purplish in very ill cases, was exemplified in Mrs McG , the only fatal case, whose rash, although generalised, was never more than a dull purplish mottling In all cases the rash developed before the Weil-Felix reaction became positive

Hyperæmia of the Skin —A striking feature of the cases was a tendency to a sodden, hyperæmic skin, best appreciated on the dependent parts—e g , on the back—and shown by the marking of the skin by the bed clothes and the presence of large erythematous blotches on pressure points This hyperæmia was noted by Murchison, and is in contrast to what is found in most other acute febrile conditions

Advance Stage —With the appearance of the rash there was greater constitutional disturbance, the temperature reached its highest level, and the patients looked acutely ill. The outstanding feature was great drowsiness and lethargy, particularly noticeable in the younger patients, who, from being comparatively bright and lively, now became absolutely listless and apathetic, and relapsed into their drowsy state as soon as they were left undisturbed Later, when the rash was fading, there was an amelioration of the symptoms and a fall in temperature in the more favourable cases. In the more severely ill patients, however, the temperature kept continuously elevated, the pulse became more rapid, numbering over 120 per minute, and the gravity of the patient's condition increased until crisis was reached about the twelfth to fourteenth day

Crisis —In no case was the crisis dramatic or sudden , it was more of the nature of a rapid lysis than an actual crisis Although the temperature fell from 103° F. or thereby to normal in 36 to 48 hours, the patients, while they professed to feel much better, still looked fairly ill and remained in their drowsy condition for some days after the temperature commenced to drop In the younger children (W B , 10 years, and J B , 13 years) the crisis occurred on the tenth and eleventh days, and in the others, except Mrs E R , on the twelfth to fourteenth day. From the thirteenth till the twenty-fourth day of infection Mrs E R was exceedingly ill and prostrated She lay in a low, typhoid state, unable to help herself or ask for anything, muttering frequently, and talking incoherently The tongue was very dry, cracked, and covered with a blackish fur , the eyes were dull and glazed and the facies bloated and expressionless From the fifteenth day subsultus tendinum was present, at times to an extreme degree, while on the night of the sixteenth day there was a sharp rigor followed by a collapsed state for 12 hours At night she was restless and sleepless and for two days there was a smouldering, resentful look in the eyes significant of impending delirium ferox The pulse was soft, irregular, and increased in rate to 130–140, but from the sixteenth day there was a gradual fall of temperature until on the twenty-third day of illness it reached normal. Convalescence was rather protracted, several weeks elapsing before the patient had regained sufficient strength to sit up

Temperature and Pulse —The temperature curve was of parabolic type, commencing from about 100° to 101° F. and rising steadily with slight remissions to 104° on the

FOUR REPRESENTATIVE TEMPERATURE CHARTS.

FIG. 3.

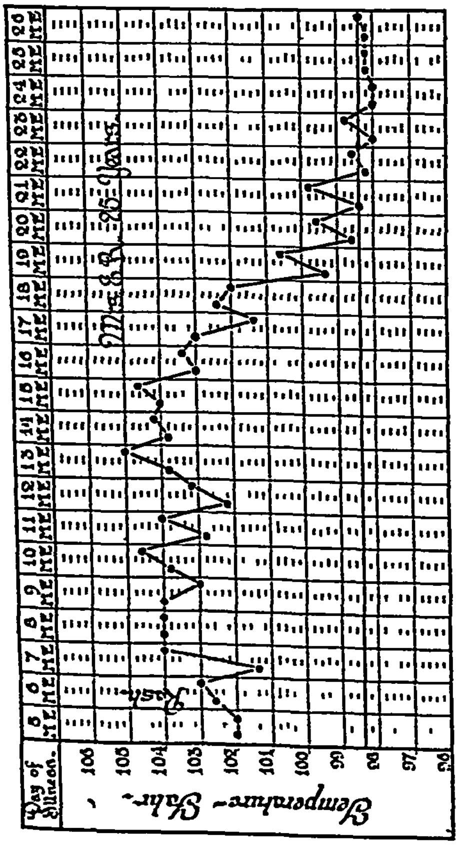


FIG. 4.

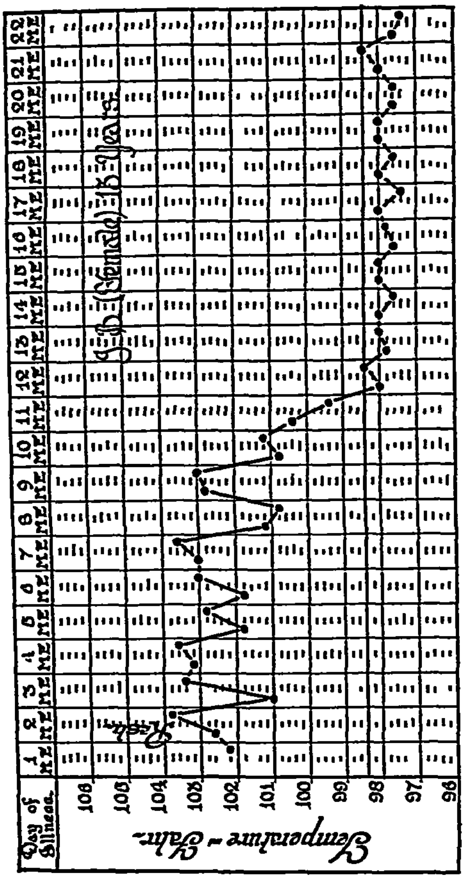


FIG. 5.

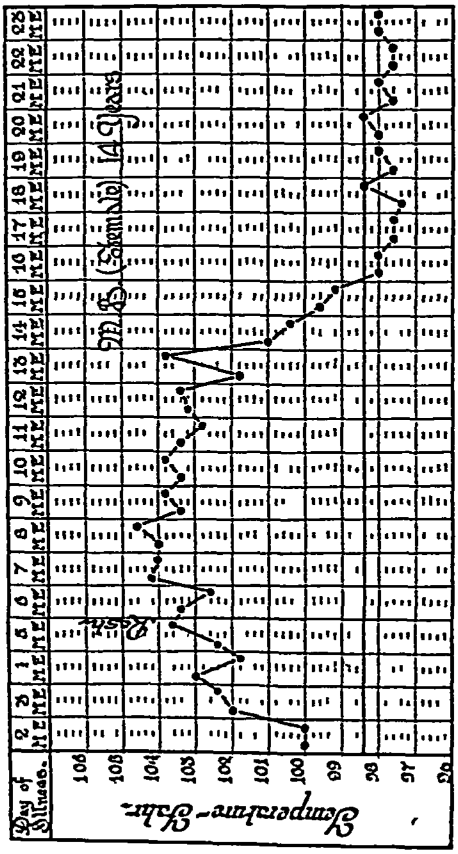
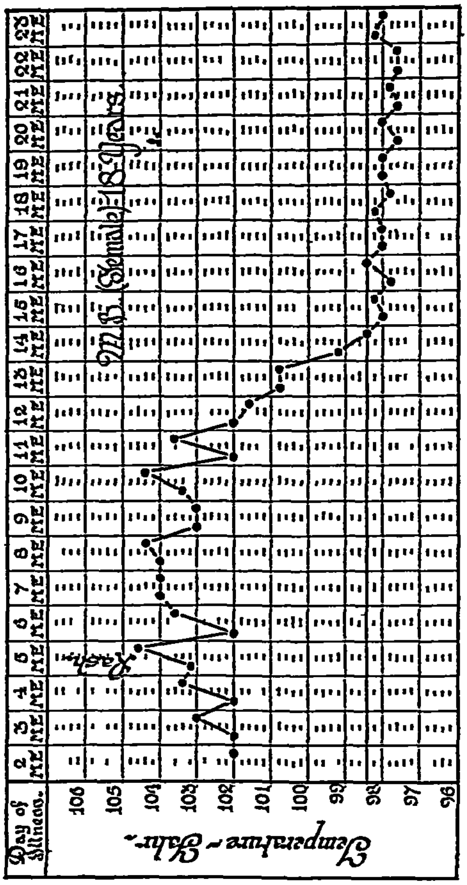


FIG. 6.



fifth or sixth day of illness—the active eruptive period During the second week the temperature tended to fall a little in the more favourable cases, ranging around 103° and dropping on the thirteenth or fourteenth day to reach normal two days later This tendency to fall off during the second week of the illness was regarded by Claude Ker[1] as a favourable prognostic sign Whereas in the severely ill patients the temperature was more or less continuous, in the milder cases it tended to be remittent in character The temperature chart of Mrs E R resembled that of a case of enteric fever in its slow lysis The pulse-rate rose with the temperature and ranged from 110 to 120 in most of the cases, but in E R 's there was an acceleration to 130 which seems to warrant a bad prognosis The pulse in the early stages was full and bounding, but later became softer and more dicrotic The pulse-rate again fell with the temperature (see Figs 3, 4, 5, 6)

Respiratory System —Bronchitis and pulmonary symptoms have been regarded as a feature of typhus in previous outbreaks, but in the present series only one case developed bronchitis The three most acutely ill patients showed a degree of hypostatic congestion during the crisis

Facies —In the early stages, and in the milder cases throughout the entire illness, there was no coarsening of the features nor tendency to congestion of the facies with pink-eye, usually described in typhus, but in the more severely ill patients after the eruption there was a definitely *congested "heavy"* facies with conjunctival injection and a dull, stupid expression, well described by the word "bloated"

Alimentary System —In all cases there developed a dry parched dirty condition of the mouth with sordes on the gums The tongue became dry, glazed, covered with a thick brownish fur, and towards the crisis tended to become cracked and fissured, resembling in this respect the tongue in typhoid fever In the more ill patients it was protruded with difficulty or not at all, and showed a coarse tremor From the beginning there was loss of appetite, but great thirst was a prominent symptom throughout the entire illness In the early stages the bowels were constipated, but from the tenth to twelfth day looseness developed in several cases ("the critical evacuation") and with one patient (S B , 20 years) an acute attack of diarrhœa ensued lasting several days and followed by an intense catarrhal jaundice from the thirteenth to the twenty-third day of illness In none of the cases could either the liver or the spleen be palpated

Odour —A stale odour was detected in several of the cases, but this was not sufficiently distinctive to be regarded as specific The fœtor of the breath which was present in the cases under review was sufficient to obscure any specific odour

Nervous System —The tendency to hyperexcitability in the early stages of the disease in the younger subjects has already been referred to In the late stage of the illness there were slight meningeal features, such as an appreciable degree of nuchal rigidity and a positive Kernig's sign Hyperæsthesia was noted in some of the patients During the second week there was a loss of superficial and deep reflexes, accompanied by involuntary evacuation of bladder and bowels The pupils usually described as being contracted were not markedly so in the present series Deafness, however, was an obtrusive symptom in all but two cases All patients appeared stupid and unintelligent In the more ill patients speech became slow, slurred, and incoherent, but this seemed to be due in part to mucus collecting in the throat These cases showed a degree of mental confusion and towards the crisis exhibited a low, muttering type of delirium, talking nonsense and attempting to get out of bed, but were not unduly obstreperous Hallucinations, delusions, or unpleasant dreams did not appear to be present.

Convalescence —Convalescence was rapid and uncomplicated in all cases except for W B (10 years), who developed an urticarial eruption with a rise of temperature during the second week of convalescence, while M B (18 years) had an intractable bacilluria for ten days after her crisis Deafness and mental sluggishness disappeared in the early days of convalescence and the patients rapidly assumed their former bright appearance

Laboratory Investigations

Serological and bacteriological examination of the blood, urine, and cerebro-spinal fluid were carried out in the hospital laboratory

Blood —Blood cultures in trypsinised broth yielded negative results The red blood cells varied from 3,000,000 to 4,000,000 per c mm White blood counts showed moderate leucocytosis (15,000 to 20,000 cells per c mm), mostly polymorphonuclear in type, with a relative increase of large mononuclear and hyaline cells

Wassermann Reaction —This reaction performed before the crisis (about tenth to twelfth day of illness) was positive in four out of six cases The two negatives were J B (13 years), whose illness was of a milder nature, and Mrs McG , whose blood was tested on the sixth and eighth days of her illness The reaction, repeated in all cases (except Mrs McG , who died), on the twenty-first to twenty third days of illness (approximately a week after the crisis) was still positive in the cases of Mrs E R and S B A week later all cases gave negative results

In 1921 Bauer[2] tested the blood of 50 cases of typhus before the crisis and found that 46 of these gave a positive Wassermann reaction Tested again in convalescence 20 out of 21 gave a negative reaction, and Bauer concluded that the Wassermann reaction of typhus was almost always positive before the crisis and became negative in convalescence The findings in the present series agree with his results and support his conclusion that a positive Wassermann reaction before the crisis is helpful in the differential diagnosis between typhus and enteric fever

Weil-Felix Reaction —In carrying out this reaction the method adopted was analogous to the Widal test in typhoid A 24-hour culture of *B proteus* X 19, grown on an agar slope and emulsified in normal-saline, was used as the bacterial emulsion, and dilutions of the patients' serum were made up to 1 5000 in every case, the results being read after immersion of the tubes in the water-bath for two hours at 56° C and 20 minutes at room temperature The Weil-Felix reaction was tested with each patient's serum every day until the crisis and thereafter every second or third day until the reaction became negative The earliest day of illness on which agglutinins were demonstrated in the blood was the fifth, when a 1 25 dilution of the serum of M. B (15 years) agglutinated the *B proteus* X 19 emulsion. The serum of the other cases agglutinated the organism in a similar dilution or in 1 . 50 on the sixth and seventh days of the fever There was a rapid increase in the agglutinating power of the serum on each succeeding day until the titre for each patient's serum was reached This varied from 1 250 (Mrs E R and J B) to 1 3000 (S B and G B.), except in the case of W B , whose serum did not produce agglutination in a dilution beyond 1 50 The maximum dilution was always attained before the crisis, and was maintained for a period varying from four to seven days after the crisis, while it fell slowly to become negative at a period varying from six weeks to three months from the onset of the illness

It is, perhaps, unwise to draw conclusions from such a small series It would seem, however, that the extent to which agglutinins appeared in the blood varied directly with the severity of the case , on the other hand, the lack of reaction in the case of Mrs E R , whose illness was the most severe, would seem to be correlated to a diminished reaction of the blood in the formation of agglutinins The Weil-Felix reaction was performed with the cerebro-spinal fluid of all cases except that of G B (25 years) In only two of the cases, S B and M B (15 years), were agglutinins demonstrable In the former a dilution of 1 10 of the fluid agglutinated the proteus emulsion when the titre of the blood-serum was 1 2500, while in the latter a dilution of 1 5 of the fluid agglutinated at the time when the serum titre was 1 1000

Cerebro-spinal Fluid —In view of the results of the cerebro-spinal fluid examination of the primary case—viz., turbid fluid, increase of globulin, and a cellular exudate composed more of polymorphs than of lymphocytes and the meningeal features present in most of the cases the cerebro-spinal fluids of all the patients (except Mrs McG) were examined (*a*) in the first week of the illness, and (*b*) immediately before the crisis The fluid withdrawn at the early stage of the fever was normal in all cases, but the second lumbar puncture yielded a fluid which in the three most ill patients (M B , 15 years, S B , and Mrs E R) showed an increase of globulin (salicyl-sulphonic acid test and Pandy's test), but no cellular exudate Sugar was normal or slightly increased in amount Cultures on agar and serum were made from the centrifugalised fluid in all cases, but no growth was obtained Neither the Wassermann reaction nor the Lange colloidal gold test was performed on any of the fluids

Urine —The urines were of typically febrile type with a deposit of urates, and in the second week albumin was present in varying amounts Chlorides were diminished in quantity

Diazo Reaction —This reaction was brilliantly positive in all cases from the beginning of the fever Unfortunately a positive Diazo reaction is given with the urine of other fevers (measles, typhoid, and pneumonia) with which typhus might be confused, so that a positive result is of little diagnostic value except possibly in the early stage of the illness

Urine Cultures —Catheter specimens of the urine were taken from each of the female patients and uncontaminated specimens secured from the males on each of three successive days in an attempt to recover *B proteus* X 19 Gram-negative coliform organisms were isolated from the urine of two of the patients (M B, 15 years, and S B), but emulsions of these organisms were not agglutinated by the patients' serum Streptococci and staphylococci were present in another specimen, but these were regarded as contaminations M B (18 years) had a coliform bacilluria immediately after the crisis, although her urine had previously been sterile *B proteus* X 19 was not recovered from any of the specimens

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[1] Ker, C B Manual of Infectious Diseases, p 220

[2] Bauer Munch med Wochenschr , 1921, lxviii , 1251–2

Diagnosis

In the pre-eruptive stage of the fever there were no symptoms which could be regarded as distinctive Headache, backache, and general malaise are common to such infections as influenza, small-pox in its modified form, and typhoid fever, all of which occur in epidemic form In the present series the only features which might have helped to differentiate typhus from these diseases were the acute onset with rigors in two of the cases, and the presence within the first two or three days of positive Diazo reactions in the urines The rash, when fully developed, was distinctive of typhus The combination of papulo-macules, macules, and subcuticular lesions gave it a pleomorphic character which made it readily differentiable from the other exanthemata The dull, dusky mottled eruption of the older and more ill cases, however, might be easily missed under the conditions in which typhus is usually found The Weil-Felix reaction was not positive until the fifth day at the earliest, and usually the rash was fully developed before a positive reaction was obtained, so that its value as a diagnostic feature in the early stages of the illness was practically nil Later, however, a positive Weil-Felix reaction in a dilution of 1 50 or over might be regarded as diagnostic of typhus The Weil-Felix reaction was done in several cases of typhoid and paratyphoid fever and in scarlet fever with negative results In the later stages the fading eruption resembled closely the late stage of an intense scarlet fever rash The resemblance of the primary case to meningitis and the meningeal features present in other cases indicate the necessity for testing the blood for Weil-Felix reaction where a diagnosis of meningitis cannot be confirmed by examination of the cerebro-spinal fluid

We desire to thank Dr A S M Macgregor, medical officer of health, and Dr T Archibald, medical superintendent, Belvidere Hospital, for their helpful criticism

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THE HEALTH OF THE ARMY IN 1925

THE new Blue Book [1] on the Health of the Army refers to the calendar year 1925, which, as we have already remarked, is gratifying evidence that the post-war delay is being overcome The total number of persons concerned, officers and other ranks, being almost the same as in 1924, the lessened incidence of illness is easily seen The decimal figures which follow are rates per 1000 men, the corresponding figures for the previous year being given in brackets for comparison

The officers' death-rate stood at 4 44 (3 93), that from injuries had dropped to 1 12 (1 85), while that from "diseases of the digestive system, except liver and tonsillitis" rose to 0 91 (0 39), there were more suicides among officers than among other ranks, more cases of enteric fever (2 1 against 1 1), and officers in India were found to be less well protected by inoculation (87 against 95 per cent) than other ranks This incompleteness in officers has been dealt with Amongst the 193,507 other ranks there were, in 1925, 8600 fewer cases of malaria, 3000 less in India alone, a result which may fairly be claimed as the result of foresight · there were 3600 fewer cases of influenza and a welcome reduction of 600 in the admissions for venereal disease In general there were fewer admissions, 446 2 (484 7), fewer deaths, 2 35 (2 80), fewer invalids finally discharged, 11·12 (13 00), and fewer constantly sick, 25 70 (27 11), a tangible all-round improvement The chief cause of admission was malaria, 51 8, injuries came next The chief causes of deaths were, from injuries, 0 62 (0 90), from pneumonia, 0 33 (0 33), from digestive diseases as above, 0 25 (0 21) The Commands in which the soldier had least sickness were Channel Islands, 3 9 days illness per man per annum, and Bermuda, 4 19, the heaviest incidence, 20 91 days, occurred in Malaya The 226 Woolwich cadets had a sick-list of 20 31, those at Sandhurst had 22 00, but local injuries are frequently due to training and games The boys at the Technical School, who are younger, showed a sick-list of 32 07

An outstanding feature of the year was the increase in the number of cases of gastric, 41 (25), and duodenal, 53 (29), ulcers, they cause much anxiety as they are so insidious One gastric case had no symptom prior to perforation, a man, found dead in his barrack room at 2 30 P M, had succumbed to hæmorrhage from a duodenal ulcer, and an athletic officer, admitted for severe anæmia, was similarly suffering These ulcers are apt to be associated with hyperchlorhydria and as Mr A J Walton recently reminded the Royal Society of Medicine, they attack some of the finest built men, of whom the more active and energetic tend to have hyperacidity The report calls these ulcers a disease of non-commissioned officers Their increased frequency has been noticed also in the Navy too, 52, 48, and 83 being the figures for last three available years, and was associated at a recent meeting of the War Section with recent alterations in diet These ulcers are not mentioned in the reports from India, but the death-rate there from "diseases of the digestive system, other than of liver or tonsils" has increased to 0 37 (0 24)

Fewer cases of amœbic dysentery were found in India, and fewer liver abscesses were seen, a polyvalent (Shiga and Flexner) antidysentery vaccine has been prepared Malaria is being dealt with by drainage and other antilarval engineering methods, by nets and electric fans, by better education of the individual, and by keeping troops away from the dangerous areas It seems to us doubtful whether it is wise to remit microscopical diagnosis as there seems a tendency to do from the report Pneumonia incidence is greatest at home, and its case-mortality is there highest—e g, in the Scottish (4 1, 227) and Northern (4 0, 152) Commands, the average figures at home being 2 5 and 100, the death-rate from pneumonia in India is 0 51, and in the rest of the army only 0 25 Sand-fly fever is less prevalent this year, which at Malta is thought to be the outcome of antifly measures, although the authorities at home do not expressly say so

Pulmonary tuberculosis has slightly increased 1 3 (1 2), its incidence being heaviest in Egypt (2 9), Malta, and the Rhine Venereal diseases had fewer admissions, 44 4 (46 8), particularly of syphilis, the reduction being ascribed to the increased numbers of ablution centres, through one of these, at Quetta 6057 men passed and only 8 developed disease There was great reduction in Malaya, from 108 8 to 65 2, as a result of special effort The usual treatment of syphilis is with stabilarsan and bismuth Electrical treatment of gonorrhœa has been discarded but usual treatment is more successful now than formerly, for fewer cases of stricture are met with

Encephalitis lethargica is regarded as leaving an individual "never likely to make an *efficient soldier*" One-third of the admissions for mental disease are ascribed to dementia præcox The increasing number of middle-ear complaints is causing concern A spleen was removed for splenic anæmia, and the patient is stated to be doing well An acute case of lymphatic leukæmia ended in death in 14 days Many cases of chronic appendicitis were found among cases of indefinite dyspepsia, and appendicectomy cured them In all there were 942 (881) admissions for appendicitis Some recruit depôts have had boots issued to them raised one-third of an inch on the inner side to prevent flat-foot, and care is being taken to keep the recruit off his feet as much as possible with the same object Several patients have asked for operation for internal derangement of the knee-joint to enable them to go on playing football Cases of acute synovitis of the knee are aspirated and recovery is then hastened

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[1] H M Stationery Office Pp 152 3s 6d.

New operating rooms are being installed, and X ray coils are being replaced by high tension transformers Army cooks are given very efficient training, and the Inspector of Army Catering does much to improve the dietary of the soldier Recruits from country districts have the better teeth, only 4 8 per man diseased or missing, but 6 7 in those from industrial areas, though these have the cleaner mouths, the best and worst were in Scotland (1 4 and 9 3) On the average 4 34 (4 18) diseased teeth were dealt with per man, and Indian troops began to be helped

There were 381 more recruits examined this year; fewer were rejected and fewer discharged under six months' service Diseases of the middle ear caused most of the rejections in both groups There were fewer rejections for insufficient weight, deficient height or chest measurement It may be that we are now getting past the nutritional handicap of the war The sanitary education spreading from the Army School of Hygiene, which dealt with 121 officers and 1263 other ranks in the year, is thought to have assisted in securing the improvement observed in the sanitary condition of camps A very striking improvement was noted in the health of troops on board ship, admissions being 184 0, instead of 233 0, and no deaths, this may be associated with the increased cubic space and better ventilation

MEDICINE AND THE LAW.

"ADEQUATE MEDICAL AID" · THE PARENT'S LEGAL DUTY

CAN a parent refuse to have his children's teeth extracted for the benefit of their health? Can he decline to allow their adenoids or tonsils to be removed? The answer to these questions was given in the negative nearly 20 years ago, but there are fathers and mothers who are still unaware of their legal responsibility Section 12 of the Children Act made it an offence for a parent or guardian to ill-treat a child The offence was made to cover any wilful neglect which caused the child unnecessary suffering or injury to health, it also covered the omission to provide adequate medical aid Nor was this latter responsibility confined only to those wealthier parents who could afford to pay for the services of doctor and surgeon; it was laid equally upon the less well-to-do who are liable to punishment if they fail to take advantage of the medical services which in various ways are provided for children without charge Thus a fortnight ago a father and mother were summoned at Tower Bridge Police-court for neglecting to have dental treatment for their son, aged 10 The prosecution said that representations had been made to the parents for the last five years about the boy's teeth and that free treatment had been offered and refused It was said that in consequence the boy had suffered from abscesses in the jaw, anæmia, carious teeth, and enlarged glands, and that his health was generally poor His father admitted that the boy's teeth were bad, but said that his son had been attended by a private dentist and that the London County Council doctors wanted to take all the lad's teeth out at once The magistrate fined the father 40*s* and 3 guineas costs and fined the mother 20*s* This was a more vigorous sentence than that of the Bridlington judges, who had recently to deal with another charge under Section 12 The summons was for omitting to have a daughter's tonsils removed, the child having been caused unnecessary suffering and injury to health because the operation had not been performed Dr. A K Jarratt, school medical officer and medical officer of health for the borough of Bridlington, gave evidence that the little girl's tonsils were so greatly enlarged that they almost met, he said it was the worst case he had seen in the schools in 16 years of attendance; he pointed out the danger to the child if she should suffer from an affection of the throat, pneumonia, scarlet fever, or diphtheria He had many times advised the parents, the nurse had also tried to persuade them to have the operation performed, but they would not consent Dr James Kirk gave similar evidence, and no rebutting evidence was called for the defence All that the father and mother could say was that the little girl never ailed; she was good at her lessons and well up in her class; why should she have an operation when there was nothing wrong with her? The father said there was a similar case in the same street where a little girl had had her tonsils taken out and was none the better for it, if his daughter had to go to hospital she would cry all the time she was there The magistrates asked the doctors several questions as to the possible risk of the operation, they were evidently reluctant to interfere with the liberty of the subject, yet the medical evidence was clear that the child's growth and development were being impeded and her powers of resisting illness diminished Finally the bench compromised by adjourning the proceedings and giving the parents a month's grace in which to comply with the medical requirements If the magistrates had been aware of the facts and the judgments in the leading case on the subject (Oakey *v.* Jackson, decided in 1914) they might have taken a stronger line

Oakey *v* Jackson was a case in which a little girl suffered from adenoids and her parents refused to have an operation There was medical evidence that the disability was causing mental dullness, impaired breathing, deafness, and anæmia, and that a surgical operation for removing the adenoids was the only remedy The parents did not consider an operation necessary, and did not believe in operations at all —though, apart from this refusal, there was no evidence of neglect It was argued on their behalf that the Children Act was never intended to compel surgical operations involving the administration of anæsthetics and, perhaps, involving an element of danger to life Accepting this view the Leicestershire magistrates, before whom the parents were brought, held that there was no legal liability to allow the operation to be performed and that refusal was not wilful neglect within the meaning of the Act In the King's Bench Division, Darling, J, said that the words of the Act referring to injury to or loss of sight quite clearly showed that the statute contemplated cases of compelling a parent to allow a child to undergo an operation "It is not necessary to know much about surgery," said the learned judge, "to know that the operation for the removal of adenoids is very common in the case of children and that a failure to perform the operation may result in danger to the child's life if the child should ever happen to be attacked with illness" The judges held that whether or not there had been a failure to provide adequate medical aid must depend on the facts of each particular case They thought the magistrates might very well have convicted the parents on the facts stated, and they sent the case back to the magistrates for further consideration Mr Justice Avory added that one matter to be taken into consideration by the justices in deciding cases of this kind was whether the person who advised the operation was a qualified medical practitioner or merely some irresponsible person As for "wilful neglect," the judges approved the dicta of Lord Russell of Killowen when Lord Chief Justice In a case decided in 1899 he said that "wilful" meant that the act was done deliberately and intentionally, not being accident or inadvertence, but so that the mind of the person who did the act went with it "Neglect" meant want of reasonable care, the omission of such steps as a reasonable parent would take, such steps as are usually taken in the ordinary experience of mankind, provided that the parent had such means as would enable him to do what was necessary Means, we know, are forthcoming for the free treatment of school-children in necessitous cases Parents are often reluctant to send their children to hospital, and magistrates are equally reluctant to use legal compulsion where persuasion has failed But it is well that there should be no doubt that the parents have, in fact, a legal responsibility and that they commit an offence if they obstruct the provision of adequate medical and surgical aid, and thus fail to give their children the best possible chance in life

THERAPEUTIC SUBSTANCES ACT, 1925

DRAFT RULES AND ORDERS

IN August, 1925, an Act was passed designed to secure the potency and purity of those therapeutic substances in the market for which standards and methods of testing have been devised, but which cannot be tested by purely chemical means These substances at present include (1) vaccines, toxins, antigens, sera, and antitoxins, (2) salvarsan and its derivatives, (3) insulin and pituitary extract A joint committee of the licensing authorities concerned in the Act was formed, these authorities being, for England, the Minister of Health, for Scotland, the Secretary of State for Scotland, and for Northern Ireland, the Minister for Home Affairs To assist this joint committee in devising standards and drawing up regulations an advisory committee was set up, consisting of the following personnel Sir George Newman (Chairman), representing the Ministry of Health, Mr John Jeffrey, the Scottish Board of Health, Sir Thomas Houston, the Ministry of Home Affairs in Northern Ireland, Dr H H Dale, F R S, the Medical Research Council; Sir Nestor Tirard, the General Medical Council, Dr C O Hawthorne, the British Medical Association, Dr J H Burn, the Pharmaceutical Society of Great Britain; and Dr J F Tocher, the Institute of Chemistry

The result of the labours of these committees has now been published in the form of the draft regulations,[1] summarised below, which are to come into operation on August 6th, 1927

The Proposed Regulations

The regulations consist of seven parts supplemented by forms of application for licence and detailed schedules of the specific requirements for each substance The first part is concerned with definitions, the second with licences for manufacture of therapeutic substances Each licensee will have to provide and maintain adequate staff, premises, and plant, not only for the proper manufacture of the substance in respect of which the licence is issued, but also for carrying out tests of strength, quality, and purity, unless he makes arrangements with some approved institution for tests to be carried out regularly on his behalf He must keep records of the details of manufacture of each batch of the substance, and of the application of the tests, in a form convenient for inspection Any premises where manufacture of therapeutic substances is carried on are to be liable to inspection, also the processes of manufacture and the means employed for standardisation and testing Any change in the expert staff responsible for manufacture or testing of the substances used, or any material alterations in the premises or plant have to be notified The continued production of any substances under conditions which do not satisfy the licensing authority will not be allowed

The third part of the regulations provides for the proper labelling of the containers in which the substances are sold If any therapeutic substance is advertised or sold as a proprietary medicine or is contained in medicine so advertised or sold, the name stated in the relative schedule as being the accepted scientific name or name descriptive of the true nature and origin of the substance is to appear on the label Moreover, the proper name of the substance is to be set out in letters not smaller or less conspicuous than those in which the proprietary name, if any, is printed or written On the label, or printed or written in indelible ink on a wrapper, is to be set out the name and address of the manufacturer, the number of the licence under which the substance is manufactured, a distinctive batch number, the date on which the manufacture of the batch was completed, and a statement of potency or toxicity where tests for potency or toxicity are required

An interesting provision is that—

> No person shall sell any therapeutic substance after the date recorded on the container, label, or wrapper as the date up to which the substance may be expected to retain a potency not less than, *or not to acquire a toxicity greater* than, that required or permitted by the test, as the case may be Provided that a person may at the request of a registered medical practitioner sell after the date aforesaid any therapeutic substance (except such as are required to be tested for maximum toxicity) which loses its potency, if he has previously drawn the practitioner's attention to the dates recorded on the container, label, or wrapper, and the practitioner is satisfied that the sale is required by the urgency of the case

The fourth part of the regulations deals with standards of strength, quality, and purity and tests for determining whether these standards have been attained Precautions are taken to ensure that the preparations are sterile and that the samples are typical of the rest of the batch The hydrogen-ion concentration of the media to be used in making the tests is set out, and a general account is given of the methods used.

In Part V of the regulations licences for import of therapeutic substances are considered, precautions being taken to see that substances not manufactured in this country but offered for sale here should not fall below a reasonable standard

Research Licences.

In Part VI the conditions on which special licences to import therapeutic substances for the purpose of scientific research are to be granted are set out as follows —

> (1) The licensee shall use the substances imported under the licence for purposes of scientific research exclusively, and shall carry on such research in the place specified in the licence,
>
> (2) The licensee shall allow any inspector authorised by the licensing authority in that behalf to enter with or without prior notice the premises where the substances are kept and to inspect the premises and investigate the manner in which the substances are being used, and to take samples thereof,
>
> (3) The licensee shall keep a record of the substances imported under the licence, together with the quantities imported, the date of importation, and the name of the manufacturer,
>
> (4) The licensee shall comply with such further requirements, if any, applicable to the holders of research licences, as may be specified in any regulations which may be made under the Act, and of which the licensing authority has given to the licensee not less than one month's notice

Part VII provides that the regulations are not applicable to therapeutic substances which are labelled as intended to be used only for veterinary purposes

Schedules

The schedules which follow the draft regulations include forms of application for various forms of licence and the provisions applicable respectively to the production of bacterial vaccines, of vaccine lymph, of toxins and antigens, of diphtheria prophylactic, of tuberculin and tubercle vaccines and of sera from living animals The provisions as to particular sera and antitoxins are then set out, including those applicable to antimeningococcus serum and to other sera for which no potency test is described, to anti-dysentery sera, to diphtheria antitoxin, and to tetanus antitoxin The third schedule gives details of the general provisions applicable to salvarsan and its derivatives and the special provisions applicable to various named derivatives The fourth schedule is concerned with insulin It is to be a condition of every licence for the manufacture of insulin that it shall be issued either as a sterile watery solution or in the form of sterile compressed tablets readily and completely soluble in water, that insulin shall not be issued mixed with other therapeutic agents except with the previous consent of the licensing authority, and that insulin shall not be issued with the recommendation for its administration by any other method than that by injection through the skin The schedule concerned with pituitary (posterior lobe) extract concludes the list

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[1] Draft Rules and Orders 1927 Therapeutic Substances H M Stationery Office Pp 33 9d

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

Infectious Disease at Dairies

THIS is the title of a compact circular just issued by the Scottish Board of Health The object of the circular is to point out what the dairymen and their employees can do, and may be punished for not doing, in their efforts to assist the local health authority to protect the milk-supply from contamination with infectious diseases In this regard the Milk and Dairies (Scotland) Act, 1914, which, after one or two postponements on account of the war or post-war conditions, is now in force, placed on dairymen and their workers very specific obligations It is the manifest interest of dairymen to take every step at the earliest moment to secure that no infected person handles cows or milk, and to invoke the help of the medical officer of health It appears to be the case, however, that, according to the circular, " when a milk-supply is suspected of causing disease the attitude of the producer of milk and his employees is too often one of indifference or of actual obstruction " These, as every county or city medical officer knows, are very mild words for the conditions experienced Fortunately, the machinery for detection is now efficient enough to create a wholesome fear, and fear is a good schoolmaster even for slow wits

The circular details with precision the legal duties of dairymen and their employees and the powers of the medical officer of health and the local authority To give special point to the new circular, the Board records the following —

> " During 1926 several outbreaks of infectious disease were spread by milkers who, themselves infected, continued to milk cows In one outbreak about 150 cases of dysentery were caused by a milker who had contracted the disease and continued at work, though she suffered from what was apparently diarrhœa, and broke the law by continuing to work while so suffering In another outbreak over 150 cases of scarlet fever were caused by a milkmaid who continued to milk cows while suffering from a mild attack of scarlet fever In spite of careful inquiries, essential facts were withheld from the medical officer of health which, had they been disclosed, would almost certainly have curtailed this serious outbreak "

The circular is to be had from the Stationery Office for 1*d*, and all concerned should possess it

Sampling of Bottled Milk

In response to representations by the Association of Public Analysts the Scottish Board of Health has issued a short set of directions for sampling bottled milk under the Sale of Food and Drugs Act At first sight nothing seems more simple But experience tells a different tale, for we learn that " unequal distribution of the butter-fat is particularly liable to occur in the case of bottled milk, and as the sale of bottled milk is spreading rapidly, it is necessary to reconsider the methods of official sampling " The point is to secure that, before the sample is taken, the milk shall be thoroughly mixed Evidence laid before the recent Scottish Departmental Committee on the Milk Standard showed how many pitfalls there are in sampling even when the persons concerned are all honest Case after case has been wrongly decided on account of slip-shod sampling This circular contains a series of nine special precautions and these have obviously been carefully thought out in concert with analysts and sampling officers This circular also is to be had for 1*d* and should be in general circulation

Physical Education

The College of Hygiene and Physical Education at Dunfermline continues to be the centre of Scottish activities in physical education and related subjects It is many years ago since, in cooperation with the Scottish Education Department and its officers, the Dunfermline Carnegie Trustees converted the College into a type of medical school, with a medical principal and medical teachers, and trained lay specialists in modern methods of physical education and remedial gymnastics The College is now a " central institution " under the code Last week a four days' special course ended, having been attended by 135 students and teachers from all parts of England, Scotland, and Ireland The course, which included lectures and demonstrations in respect of physical education swimming, gymnastics, dancing, and games (including umpiring), was conducted under the auspices of the Scottish League for Physical Education (Women), the Carnegie Trustees granting the use of the College and gymnasium for lectures and demonstrations

How eminently fitted for these purposes this carefully designed College is, only those familiar with its past work can understand Andrew Carnegie placed Scotland in an enviable position when he made this fine institution possible

The Reorganisation of Offices (Scotland) Bill.

The Bill for the conversion of the Scottish Board of Health and the Scottish Board of Agriculture from " boards " into " departments " of health and agriculture respectively, has not yet passed the second reading, the debate having been adjourned under the rules of the House Meanwhile, the Executive Committee of the National Farmers' Union of Scotland have had the matter before them and have passed a unanimous resolution protesting " against this Bill in so far as it proposes to abolish the Board of Agriculture in Edinburgh " It is interesting to find that, at last, the farmers have something good to say about the Scottish Board of Agriculture, but the importance of their resolution lies chiefly in the fact that this Board and the Board of Health stand or fall together The resolution, however, stresses the wrong point In his second reading speech, Sir John Gilmour made it perfectly clear that, so far as the relation of London to Edinburgh was concerned, the Bill made no difference whatever At the present moment the Secretary of State for Scotland is head of both Boards and controls, positively and negatively, everything they do The Boards are not independent in any sense For each of them the Secretary of State is responsible and neither board is final in any decision Sir John Gilmour pointed out that the day for the " board " type of executive was over and the " department " type, as in the Scottish Education Department and the Ministry of Health was, at least for these two boards, preferable There is much to be said for and against, but when the change is made the relationship to London will remain as it is now The history of all the Scottish " boards " is long and interesting It would form a good study in the working of political patronage This, indeed, was one of the points urged in favour of the reform

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CHEMICAL RESEARCH AT NOTTINGHAM —It is announced that Boots Pure Drug Company, Ltd, have decided to extend the scope of their research work at Nottingham, new laboratories are being equipped and the staff of research chemists will be increased The head of the research laboratories will be Mr F L Pyman, D Sc, F R S, professor of technological chemistry in the University of Manchester and in the College of Technology He is well known for investigations into the chemistry of the alkaloids and of related synthetic compounds, recently he has devoted much attention to the glyoxaline group and has effected a synthesis of histidine

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

County Borough of Plymouth.

1926 statistics: population—211 350: birth-rate. 17·2; death-rates per 1000 of the population: all causes. 12·3: tuberculosis 1·0: cancer. 1·5: respiratory diseases with influenza. 2·6: heart disease 1·5 Death-rates per 1000 births: neonatal. 2·9: infant. 72: mothers from childbirth. 3·0.

Dr. A. T Nankivell in last year's report said he would like to see every medical member of his staff engaged in some research work and, following up this idea, he writes the introduction to this year's report and leaves it to his staff to deal in special reports with various aspects of the public health work in Plymouth and its institutions The cost of the maternity and child welfare work is less than a penny rate An additional woman doctor and two more health visitors have been appointed; ultra-violet light has been installed at Stonehouse and a new centre approved at Beaumont Park. Dr Ann Clark reports that antenatal clinics have been increased from one to four per week and that the antenatal work of the nursing associations is now conducted by her staff. She also reports in detail as to the results of light treatment which has been chiefly beneficial in rickets but cases of malnutrition chronic bronchitis anæmia, and skin disease have also responded well To achieve the aim that no confinements shall take place in squalid and dirty homes, a long and difficult fight is needed, says Dr Nankivell, in order to overcome the west country prejudice which exists against lying-in homes and in favour of mothers being confined in their own tenements, however unsuitable these may be Plymouth also needs a convalescent home for debilitated mothers a hostel where little children may be cared for when the mother is in hospital or sanatorium, and day nurseries

The school service needs a residential open-air school in the country, an increase in the dental staff and a third dental clinic During the last three years the Wassermann test was recommended for 307 children In 26 cases the parents refused In 72 a positive result was obtained: 34 of these children being at ordinary schools, 22 at mental deficiency schools 14 at open-air schools, one at a school for the deaf, and one not at school. Dr. G. D. Kettlewell, the V.D. officer, says it has always been recognised that a large number of congenital syphilitics were not being treated in Plymouth Special efforts have been made in recent years to search them out, and a table is given showing the nature of the 533 cases which have been treated at the centre since 1919 Of these 313 were children of school age and included 66 cases of serious eye trouble mostly due to ulceration: 7 deaf children: 23 sufferers from bone disease, of whom 10 were cripples and 2 had been absent from school for over two years owing to the offensive smell from the nose: 15 cases of skin disease: and 71 mentally deficient (of whom nearly all have improved greatly under treatment). Thirty-three of the brothers and sisters who themselves showed no signs' were treated tentatively and the majority improved generally in health and development Physically all congenital children are stunted," says the report. ill-developed, and diminutive, many of 10 and 12 years are physically aged 6.' The estimate is put forward that there are 1000 congenital syphilitics among the children in Plymouth needing treatment including the 313 already receiving it. School teachers and nurses have given the very greatest help in searching out these children Dr. Kettlewell points out the handicap for life of these subjects many being quite unable to earn a living while many will live in institutions for the blind and mentally defective, tragedies some of which might have been averted if the children had been treated early enough.

Plymouth has now obtained hospital accommodation on shore for small-pox at the Lee Mill Hospital of the Plympton rural district council and it is intended to add 20 beds to this hospital; the port medical officer, Dr Arthur Massey, points out that Plymouth is specially exposed to risk through its shipping and that the hospital ship *Flamingo* was quite unfitted to fulfil the function of providing accommodation for small-pox. One case was landed from shipboard during the year without spread.

The damage done by rats in Plymouth is estimated at £300 000 annually. Energetic warfare is waged against them all the year round and not only in a ' rat week. Dr Massey urges, however, that much could be done by naval architects to reduce ' rodent amenities' to a minimum, when the ships are constructed. The experiment was tried of spraying the sea gulls with a special methylene-blue solution to find out if they went from the sewage outfalls to the fresh water reservoirs No blue gulls were afterwards seen around reservoirs or docks—a fact which has not been satisfactorily explained' Sir Alexander Houston's contention, it may be remembered, is that at some of the Metropolitan Water Board reservoirs frequented by gulls, the tendency for the *B. coli* to be reduced by storage of the water may be more than counteracted by the number of *B coli* in the excreta of the gulls dropped into the water.

The tuberculosis death-rate as shown by a chart, remained stationary during 1920–24, but showed a distinct decline in both 1925 and 1926 More hospital and sanatorium accommodation is needed for both pulmonary and non-pulmonary cases, as there is always a distressing waiting-list. The shortage of low-rented houses remains acute. Sooner or later, says Dr Nankivell we shall have to recognise that subsidised houses for persons who can only pay 2*s* 6*d*. a week rent are needed in every town He would also like to see municipal hostels or common lodging-houses provided, one for men, one for women, and one for married coulpes

Three insanitary areas were scheduled more than a year ago but progress is very slow. The renovation of houses, however, continues to be satisfactory and owners spent about £28 000 in repairing old property during 1926 Over 800 samples of milk were examined bacteriologically and as the vendors are always informed of adverse findings this helps to improve the cleanliness of the milk-supply. About 700 churns come in daily, and Dr. Nankivell would like to have the contents of each churn examined once a month instead of once a year, as at present. The demand for clean milk grows: 33 dairymen sell ' Certified or Grade A milk. The M and C W. centres obtain ' Certified, the isolation hospital Grade A (t t)' and the relief milk for consumptives is "Grade A."

Health propagandism has included many lectures by the medical staff, the issue of a booklet ' Health Hints —to the extent of 55 000 copies a free health film week, leaflets and posters and much help from the press

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REPORTS OF PORT MEDICAL OFFICERS.

The Tyne.

IN his report for 1926 to the Tyne Port Sanitary Authority Dr. W. E Harker states that he visited 56 vessels on account of sickness reported or suspected on board, and removed from ships one case of influenza, one of diphtheria, and one of enteric fever No infectious disease was found among the 9414 alien passengers who were mostly clean. No case of cholera, plague or yellow fever came under notice, but 3171 rats were caught on 78 vessels On 15 ships a total of 229 rats were killed with sulphur dioxide; hydrocyanic acid was not employed Just over half the dead rats were black and none of them was infected with plague. Seventeen ships had their drinking-water tanks emptied and purified because they came from ports at which cholera was present or suspected.

The main food imports into the Tyne were wheat, sugar, eggs, and fruit; no condemnations are reported. The fish landed was good; 28 of 7921 fishing boats derivatives and the special provisions applicable to various named derivatives The fourth schedule is concerned with insulin It is to be a condition of every licence for the manufacture of insulin that it shall be issued either as a sterile watery solution or in the form of sterile compressed tablets readily and completely soluble in water, that insulin shall not be issued mixed with other therapeutic agents except with the previous consent of the licensing authority, and that insulin shall not be issued with the recommendation for its administration by any other method than that by injection through the skin The schedule concerned with pituitary (posterior lobe) extract concludes the list

SCOTLAND.

(FROM OUR OWN CORRESPONDENT)

Infectious Disease at Dairies

THIS is the title of a compact circular just issued by the Scottish Board of Health The object of the circular is to point out what the dairymen and their employees can do, and may be punished for not doing, in their efforts to assist the local health authority to protect the milk-supply from contamination with infectious diseases In this regard the Milk and Dairies (Scotland) Act, 1914, which, after one or two postponements on account of the war or post-war conditions, is now in force, placed on dairymen and their workers very specific obligations It is the manifest interest of dairymen to take every step at the earliest moment to secure that no infected person handles cows or milk, and to invoke the help of the medical officer of health It appears to be the case, however, that, according to the circular, "when a milk-supply is suspected of causing disease the attitude of the producer of milk and his employees is too often one of indifference or of actual obstruction" These, as every county or city medical officer knows, are very mild words for the conditions experienced Fortunately, the machinery for detection is now efficient enough to create a wholesome fear, and fear is a good schoolmaster even for slow wits

The circular details with precision the legal duties of dairymen and their employees and the powers of the medical officer of health and the local authority To give special point to the new circular, the Board records the following —

> "During 1926 several outbreaks of infectious disease were spread by milkers who, themselves infected, continued to milk cows In one outbreak about 150 cases of dysentery were caused by a milker who had contracted the disease and continued at work, though she suffered from what was apparently diarrhœa, and broke the law by continuing to work while so suffering In another outbreak over 150 cases of scarlet fever were caused by a milkmaid who continued to milk cows while suffering from a mild attack of scarlet fever In spite of careful inquiries, essential facts were withheld from the medical officer of health which, had they been disclosed, would almost certainly have curtailed this serious outbreak"

The circular is to be had from the Stationery Office for 1*d*, and all concerned should possess it

Sampling of Bottled Milk

In response to representations by the Association of Public Analysts the Scottish Board of Health has issued a short set of directions for sampling bottled milk under the Sale of Food and Drugs Act At first sight nothing seems more simple But experience tells a different tale, for we learn that "unequal distribution of the butter-fat is particularly liable to occur in the case of bottled milk, and as the sale of bottled milk is spreading rapidly, it is necessary to reconsider the methods of official sampling" The point is to secure that before the sample is taken, the milk shall be thoroughly mixed Evidence laid before the recent Scottish Departmental Committee on the Milk Standard showed how many pitfalls there are in sampling even when the persons concerned are all honest Case after case has been wrongly decided on account of slip-shod sampling This circular contains a series of nine special precautions and these have obviously been carefully thought out in concert with analysts and sampling officers This circular also is to be had for 1*d* and should be in general circulation

Physical Education

The College of Hygiene and Physical Education at Dunfermline continues to be the centre of Scottish activities in physical education and related subjects It is many years ago since, in cooperation with the Scottish Education Department and its officers, the Dunfermline Carnegie Trustees converted the College into a type of medical school, with a medical principal and medical teachers, and trained lay specialists in modern methods of physical education and remedial gymnastics The College is now a "central institution" under the code Last week a four days' special course ended, having been attended by 135 students and teachers from all parts of England, Scotland, and Ireland. The course, which included lectures and demonstrations in respect of physical education swimming, gymnastics, dancing, and games (including umpiring), was conducted under the auspices of the Scottish League for Physical Education (Women), the Carnegie Trustees granting the use of the College and gymnasium for lectures and demonstrations

How eminently fitted for these purposes this carefully designed College is, only those familiar with its past work can understand Andrew Carnegie placed Scotland in an enviable position when he made this fine institution possible

The Reorganisation of Offices (Scotland) Bill

The Bill for the conversion of the Scottish Board of Health and the Scottish Board of Agriculture from "boards" into "departments" of health and agriculture respectively, has not yet passed the second reading, the debate having been adjourned under the rules of the House Meanwhile, the Executive Committee of the National Farmers' Union of Scotland have had the matter before them and have passed a unanimous resolution protesting "against this Bill in so far as it proposes to abolish the Board of Agriculture in Edinburgh" It is interesting to find that, at last, the farmers have something good to say about the Scottish Board of Agriculture, but the importance of their resolution lies chiefly in the fact that this Board and the Board of Health stand or fall together The resolution, however, stresses the wrong point In his second reading speech, Sir John Gilmour made it perfectly clear that, so far as the relation of London to Edinburgh was concerned, the Bill made no difference whatever At the present moment the Secretary of State for Scotland is head of both Boards and controls, positively and negatively, everything they do The Boards are not independent in any sense For each of them the Secretary of State is responsible and neither board is final in any decision Sir John Gilmour pointed out that the day for the "board" type of executive was over and the "department" type as in the Scottish Education Department and the Ministry of Health was, at least for these two boards, preferable There is much to be said for and against, but when the change is made the relationship to London will remain as it is now The history of all the Scottish "boards" is long and interesting It would form a good study in the working of political patronage This, indeed, was one of the points urged in favour of the reform

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CHEMICAL RESEARCH AT NOTTINGHAM—It is announced that Boots Pure Drug Company, Ltd, have decided to extend the scope of their research work at Nottingham, new laboratories are being equipped and the staff of research chemists will be increased The head of the research laboratories will be Mr F L Pyman, D Sc, F R S professor of technological chemistry in the University of Manchester and in the College of Technology He is well known for investigations into the chemistry of the alkaloids and of related synthetic compounds, recently he has devoted much attention to the glyoxaline group and has effected a synthesis of histidine

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH

County Borough of Plymouth

1926 statistics population—211,350 , birth-rate, 17 2, death-rates per 1000 of the population · all causes 12 3, tuberculosis, 1 0, cancer, 1 5, respiratory diseases with influenza, 2 6, heart disease, 1 5 Death-rates per 1000 births neonatal, 2 9, infant, 72 , mothers from childbirth, 3 0.

Dr A T Nankivell in last year's report said he would like to see every medical member of his staff engaged in some research work and, following up this idea he writes the introduction to this year s report and leaves it to his staff to deal in special reports with various aspects of the public health work in Plymouth and its institutions The cost of the maternity and child welfare work is less than a penny rate An additional woman doctor and two more health visitors have been appointed, ultra-violet light has been installed at Stonehouse and a new centre approved at Beaumont Park Dr Ann Clark reports that antenatal clinics have been increased from one to four per week and that the antenatal work of the nursing associations is now conducted by her staff She also reports in detail as to the results of light treatment which has been chiefly beneficial in rickets, but cases of malnutrition, chronic bronchitis anæmia, and skin disease have also responded well To achieve the aim that no confinements shall take place in squalid and dirty homes, a long and difficult fight is needed, says Dr Nankivell in order to overcome the west country prejudice which exists against lying-in homes and in favour of mothers being confined in their own tenements however unsuitable these may be Plymouth also needs a convalescent home for debilitated mothers a hostel where little children may be cared for when the mother is in hospital or sanatorium and day nurseries

The school service needs a residential open-air school in the country, an increase in the dental staff, and a third dental clinic During the last three years the Wassermann test was recommended for 307 children In 26 cases the parents refused In 72 a positive result was obtained, 34 of these children being at ordinary schools, 22 at mental deficiency schools 14 at open-air schools, one at a school for the deaf and one not at school Dr G D Kettlewell, the V D officer says it has always been recognised that a large number of congenital syphilitics were not being treated in Plymouth Special efforts have been made in recent years to search them out and a table is given showing the nature of the 533 cases which have been treated at the centre since 1919 Of these, 313 were children of school age and included 66 cases of serious eye trouble, mostly due to ulceration : 7 deaf children, 23 sufferers from bone disease of whom 10 were cripples and 2 had been absent from school for over two years owing to the offensive smell from the nose; 15 cases of skin disease; and 71 mentally deficient (of whom nearly all have improved greatly under treatment) Thirty-three of the brothers and sisters, who themselves showed " no signs " were treated tentatively and the majority improved generally in health and development " Physically all congenital children are stunted," says the report " ill-developed, and diminutive, many of 10 and 12 years are physically aged 6" The estimate is put forward that there are 1000 congenital syphilitics among the children in Plymouth needing treatment, including the 313 already receiving it School teachers and nurses have given the very greatest help in searching out these children Dr Kettlewell points out the handicap for life of these subjects many being quite unable to earn a living, while many will live in institutions for the blind and mentally defective, tragedies some of which might have been averted if the children had been treated early enough

Plymouth has now obtained hospital accommodation on shore for small-pox at the Lee Mill Hospital of the Plympton rural district council and it is intended to add 20 beds to this hospital, the port medical officer, Dr Arthur Massey, points out that Plymouth is specially exposed to risk through its shipping and that the hospital ship *Flamingo* was quite unfitted to fulfil the function of providing accommodation for small-pox One case was landed from shipboard during the year without spread

The damage done by rats in Plymouth is estimated at £300,000 annually Energetic warfare is waged against them all the year round and not only in a " rat week " Dr Massey urges, however, that much could be done by naval architects to reduce " rodent amenities " to a minimum, when the ships are constructed The experiment was tried of spraying the sea gulls with a special methylene-blue solution to find out if they went from the sewage outfalls to the fresh water reservoirs ' No blue gulls were afterwards seen around reservoirs or docks—a fact which has not been satisfactorily explained " Sir Alexander Houston s contention it may be remembered, is that at some of the Metropolitan Water Board reservoirs frequented by gulls the tendency for the *B coli* to be reduced by storage of the water may be more than counteracted by the number of *B coli* in the excreta of the gulls dropped into the water

The tuberculosis death-rate as shown by a chart, remained stationary during 1920–24 but showed a distinct decline in both 1925 and 1926 More hospital and sanatorium accommodation is needed for both pulmonary and non-pulmonary cases, as there is always a distressing waiting-list The shortage of low-rented houses remains acute Sooner or later, says Dr Nankivell we shall have to recognise that subsidised houses for persons who can only pay 2*s* 6*d*. a week rent are needed in every town He would also like to see municipal hostels or common lodging-houses provided, one for men, one for women, and one for married couples

Three insanitary areas were scheduled more than a year ago but progress is very slow. The renovation of houses, however, continues to be satisfactory and owners spent about £28,000 in repairing old property during 1926 Over 800 samples of milk were examined bacteriologically and as the vendors are always informed of adverse findings this helps to improve the cleanliness of the milk-supply About 700 churns come in daily and Dr Nankivell would like to have the contents of each churn examined once a month instead of once a year as at present. The demand for clean milk grows; 33 dairymen sell " Certified " or " Grade A ' milk The M and C W centres obtain ' Certified," the isolation hospital " Grade A (t t) ' and the relief milk for consumptives is " Grade A "

Health propagandism has included many lectures by the medical staff, the issue of a booklet " Health Hints "—to the extent of 55,000 copies a free health film week, leaflets and posters, and much help from the press

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REPORTS OF PORT MEDICAL OFFICERS

The Tyne

IN his report for 1926 to the Tyne Port Sanitary Authority Dr W. E Harker states that he visited 56 vessels on account of sickness reported or suspected on board and removed from ships one case of influenza, one of diphtheria and one of enteric fever No infectious disease was found among the 9414 alien passengers, who were mostly clean No case of cholera, plague or yellow fever came under notice but 3171 rats were caught on 78 vessels On 15 ships a total of 229 rats were killed with sulphur dioxide , hydrocyanic acid was not employed Just over half the dead rats were black and none of them was infected with plague Seventeen ships had their drinking-water tanks emptied and purified because they came from ports at which cholera was present or suspected.

The main food imports into the Tyne were wheat, sugar, eggs, and fruit , no condemnations are reported. The fish landed was good ; 28 of 7921 fishing boats had to be cleansed and deodorised In 6538 inspections of ships sanitary defects were found in 11 per cent of foreign-going and in 6 per cent of coasting vessels Peaks, fo'c'sles, w c 's, and bilges of 541 vessels were found dirty and were cleansed, 1016 old beds were burned on account of infection. Many structural defects were noted and rectified The 18 water boats of the port were examined and their tanks found in good condition

The Tyne Floating Hospital is now reserved for the isolation and treatment of the more dangerous infections from overseas, and is also equipped as a cleansing station Other infectious cases are sent to the City Hospital The usual measures were taken for the treatment of venereal disease, but Dr Harker offers no estimate of their usefulness

The work of the port decreased during 1926 by 20 or 30 per cent, probably because of the coal dispute

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED APRIL 9TH, 1927

Notifications —The following cases of infectious disease were notified *during the week* —*Small-pox*, 391 (last week 392), scarlet fever, 1271, diphtheria, 943, enteric fever, 40, pneumonia, 1052, puerperal fever, 32, puerperal pyrexia, 101, cerebro-spinal fever, 10, acute poliomyelitis, 7, encephalitis lethargica, 30, continued fever, 2, dysentery, 6, ophthalmia neonatorum, 132 No case of cholera, plague, or typhus fever was notified during the week No further cases of small-pox were notified in Kent or Surrey.

Deaths —In the aggregate of great towns, including London, there was no death from small-pox, 2 (0) from enteric fever 76 (5) from measles, 2 (0) from scarlet fever, 76 (19) from whooping-cough, 28 (9) from diphtheria, 37 (6) from diarrhœa and enteritis under two years, and 120 (14) from influenza The figures in parentheses are those for London itself

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The 1921 Census —The General Report on the Census of England and Wales, 1921, published on April 19th (H M Stationery Office 5*s*) completes the series of official volumes issued in respect of the 1921 Census, dealing with the country as a whole in much the same way as the report issued with each county volume dealt with the local figures The first and most important section deals with the numbers of the population its distribution throughout the country, its growth since the preceding census in comparison with that of earlier periods, and also with the contemporaneous growth of other nations The population numbered rather more than 37¾ millions, 649 to each square mile on the average, or about an acre per head, a density greater than that of any country in the world for which statistics are available Nearly 80 per cent of the population were enumerated as living in urban areas, and of these practically half were found in comparatively dense aggregates represented by 46 towns each containing more than 100,000 persons The rate of growth of the smallest towns is above the average for the whole country, and the rate appears to increase as the towns get larger, until the populations reach a figure in the neighbourhood of 100,000 After this the rate of increase tends to slacken off, suggesting that 100,000 roughly marks a limit of effective aggregation beyond which the advantage of further accretion begins to be offset by counterbalancing disadvantages Prominent amongst the towns which showed little increase or which decreased during the decennium are those associated with the textile industry in Lancashire and Yorkshire The new section on Dependency and Orphanhood provides a survey of the sizes, age constitution and distribution of economically dependent families in relation to their parents The comparative rarity of the large family in general is exemplified by the average which for all married men taken together measured only 1 27 children apiece More than 13 per cent of the married men returned no children under 16, while in another 23 per cent there was one child only Miners returned the largest families on the whole, but even so their average was only 1 82 for each married man, while in the case of professional men the figure sinks as low as 0 90 The fertility study, derived indirectly from the dependency statistics, throws light upon certain aspects of the birth-rate in this country which is not obtainable from the ordinary registration records

Correspondence.

"Audi alteram partem"

TESTS FOR DRUNKENNESS

To the Editor of The Lancet

Sir,—The British Medical Association Committee, under the able and wise guidance of its Chairman, Major-General Sir William Macpherson, gave the fullest attention to all possible methods for determining whether "a person concerned was so much under the influence of alcohol as to have lost control of his faculties to such an extent as to render him unable to execute safely the occupation in which he was engaged at the material time" The evidence put before the Committee proved conclusively —

(1) That in different individuals the quantity of alcohol required to impair the function of the higher nerve centres was subject to great variations—e g, in a person unaccustomed to alcoholic consumption a very slight amount might cause serious impairment, while in the case of the person inured to the effects of alcohol relatively large amounts might be ingested without appreciable impairment of control of the faculties

(2) That in the performance of complex occupational acts such as the driving of a motor-car an experienced driver might be little affected by relatively large amounts of alcohol since his long experience of driving has caused his control of the car to become almost automatic.

On the other hand, a driver of less experience who has to think of each of the special actions required for the complete control of his car before their execution would be seriously affected by a relatively small amount in his driving efficiency, whereas as regards other occupations to which he had long been accustomed his faculty control might be perfect It was considerations such as these which caused the Committee to refrain from placing definite limits on the percentage of alcohol in the blood, cerebro-spinal fluid, or urine which would serve as absolute indications of drunkenness

The Committee attached the highest importance to the valuable work of Dr Southgate on the excretion of alcohol in the urine and its presence in the blood, and each member of the Committee was provided with a copy of his paper I myself presided at the meeting of the Medico-Legal Society at which Dr Southgate and Dr Godfrey Carter read their paper On the Excretion of Alcohol in the Urine as a Guide to Alcoholic Intoxication, and at that meeting I described this work as a most important and valuable contribution to the science of toxicology. In the present state of our knowledge, however, it is impossible to give exact figures of the percentage of alcohol in blood or urine, which would in any individual mean that the borderland of sobriety had been passed, and the authors of the paper refrained from giving such an exact figure

Apart from this difficulty there were definite legal objections to the application of the test by the prosecuting authority—for example, the taking of a sample of blood from an accused person who was unwilling might be technically regarded as a legal assault *There is no objection to the application* of the test provided that the accused person is willing, and it is to be hoped that this test will be used with increased frequency, and so lead to an extension of our knowledge in the diagnosis of drunkenness I can imagine no better defence for an accused person than the evidence that the blood and urine at the time of arrest were free from alcohol

The diagnosis of drunkenness is attended with great difficulty, and the Committee stated that no single test by itself would, as a rule, justify a decision one way or the other Dr Southgate is under a misapprehension when he suggests that the Committee regarded the smell of alcohol as a test for drunkenness A careful perusal of the report will show that all that was claimed for the olfactory test was that "the smell of alcoholic liquor in the breath or in vomited matter (if any) is a sign of the consumption of alcohol," and conversely that the absence of any smell of alcoholic liquor in the breath of a person at the time of arrest renders it improbable that he had recently consumed alcohol.

The decision as to drunkenness would not rest on this test at all, but on the other tests enumerated in the report.—I am, Sir, yours faithfully,

W. H. WILLCOX.

Welbeck-street, Cavendish-square, W., April 13th, 1927.

VENESECTION FOR NARCOTIC POISONING

To the Editor of THE LANCET

SIR,—Your report of the discussion at the Royal Society of Medicine on venesection recalls to my mind an occasion when a free venesection saved the life of a lady who appeared to be dying from the effects of laudanum poisoning.

The patient had swallowed some six ounces of laudanum at least half an hour before I saw her. At first, owing to wild excitement, it was impossible to control her in any way, but she rapidly passed into a stupor, and then her stomach was washed out. Stupor quickly deepened into coma with stertorous breathing, deep cyanosis, and commencing œdema of the lungs. At this stage a free venesection was performed and the beneficial effect was soon apparent. A few hours later the patient was well on the way to recovery. Readers of De Quincey will remember his assertion that opium, in whatever quantity it is taken, does not produce *intoxication*, and that any symptoms of this nature are due to the proof spirit with which the laudanum is prepared. The preliminary stage of wild excitement recorded above may have been induced in this way.

The treatment of opium poisoning by flagellation, cold douches, and exercise forced to the point of exhaustion is now a thing of the past. Since my early hospital days improvements on the treatment then in vogue have taken the form of washing out the stomach with permanganate solutions and, due I believe to a communication by Sir William Hale-White, the use of oxygen inhalation. My experience, given above, leads me to urge also the use of free bleeding when coma is accompanied by cyanosis and signs of respiratory failure.

On leaving the patient's ground-floor flat after several anxious hours, the surgeon and myself were stopped by a constable on the doorstep and requested to give an account of our actions. We had been watched for some time through a crack in the blind!

I am, Sir, yours faithfully,

CHARLES R. BOX.

Devonshire-place, W., April 18th, 1927.

IODISM WITH GLOTTIS ŒDEMA

To the Editor of THE LANCET

SIR,—In regard to the occurrence of glottis œdema in subjects with an idiosyncrasy towards iodides, as in the case recorded by Drs. N. W. Snell and L. H. Savin (THE LANCET, April 9th, p. 759), it would be worth while in a similar case to try whether the necessity for tracheotomy could be avoided by a subcutaneous injection of adrenalin on the first appearance of the submaxillary swellings and œdema of the mucous membrane of the pharynx. In a paper entitled the Mycotic Type of Bromodermia and Iododermia: Facial, Pharyngeal, and Intra-oral Œdema, and Swelling of Salivary and Thyroid Glands in Cases of Idiosyncrasy towards Iodides[1] one of the cases to which I referred was that of a married woman aged 43 years. Potassium iodide was ordered for bronchitic symptoms. After three 15-grain doses, all on Jan. 22nd, and accompanied by ten drops of digalen, the iodide had to be discontinued, as the patient developed facial œdema, especially about the orbits, and œdema of the floor of the mouth below the tongue, together with an urticaria-like eruption on the trunk and head (very little on the extremities). She also complained of severe headache. A small subcutaneous injection of adrenalin chloride on the morning of Jan. 23rd seemed to lessen these symptoms. The œdema of the floor of the mouth had practically disappeared by Jan. 24th, and the facial œdema and urticaria-like eruption were almost gone by Jan. 25th. It should be noted that the patient had for several years been subject to occasional attacks of urticaria and occasional œdema about the orbits. Moreover, it was ascertained that on one previous occasion she had manifested an idiosyncrasy towards potassium iodide. I am, Sir, yours faithfully,

London, W., April 9th, 1927. F. PARKES WEBER.

MENINGITIS ASSOCIATED WITH *B. PROTEUS*

To the Editor of THE LANCET

SIR,—The interesting paper of Drs. G. Bewley and E. S. Horgan in your last issue reminds me of the discovery of a bacillus of the same class in the cerebro-spinal fluid of cases of cerebro-spinal fever in the years 1915 and 1916. During the outbreak of cerebro-spinal fever amongst the troops at that period, I, as specialist sanitary officer of the Irish Northern Command, in conjunction with Lieutenant R. B. Purce and Dr. Georgina Darling, made bacteriological examinations of 129 cerebro-spinal fluids.[1] In 113 cases the meningococcus was discovered and in most cases cultivated, in five the tubercle bacillus, in one a streptococcus, in two the pneumococcus, and in one the typhoid bacillus.

In 30 separate cases we cultivated from the cerebro-spinal fluid a bacillus which we designated the *Bacillus meningitidis*. In 14 consecutive cases of our series this micro-organism was found, often at the first puncture, and at several of the consecutive punctures. In one case it was discovered at the first puncture and in this fluid no meningococci were found, but they were present in the cerebro-spinal fluid drawn off at a later date. In all cases the meningococcus was also present. Our bacillus was actively motile, liquefied gelatin, and had no action on glucose, lævulose, galactose, maltose, saccharose, lactose, starch, and mannite. Three strains produced acid in glucose media, but they differed from the other strains in not liquefying gelatin.

The only difference between our bacillus and that described by Drs. Bewley and Horgan is that ours failed to ferment glucose and lævulose. As we wrote at the time, "What the exact position of this micro-organism in a bacteriological classification should be will require further study, but it is evidently allied to the vibriones, the *B. fæcalis alkaligenes*, and the *proteus* group." The majority of the cases were under the care of Dr. A. Gardner Robb, of the Belfast City Fever Hospital, and we satisfied ourselves that we were not dealing with a mere contamination.

I am, Sir, yours faithfully,

W. JAMES WILSON.

Public Health Laboratories, Queen's University,
Belfast, April 16th, 1927.

VACCINES AND THE COMMON COLD

To the Editor of THE LANCET

SIR,—The results of the investigations by Ferguson, Davey, and Topley, published in your issue of April 16th, call, I think, for some comment, especially in view of the fact that an incomplete summary of the work appeared in a leading daily paper under the heading "Vaccination against Colds—Cure Better than Prevention." To the medical reader it is clear that the conclusion arrived at is simply that *three* doses of a stock vaccine containing eight different organisms failed to protect a certain population against the occurrence of common colds, but it is possible that the general public may imagine (*a*) that this is considered by bacteriologists in general to be the best method of protective anticatarrhal vaccination, and (*b*) that vaccination of any type is useless as a preventive of catarrhal infection

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[1] Brit. Jour. Derm. and Syph., London, 1923, xxxv., 169–180.

[1] Brit. Med. Jour., 1916, ii., 900.

Many pathologists, with whom my own experience leads me to agree, would not expect to obtain any useful degree of immunity by the injection of only three doses of any anticatarrhal vaccine—stock or autogenous Here the analogy of antityphoid inoculation is fallacious On the other hand, it is found in practice that in people who are subject to catarrh pathogenic bacteria can be recovered with remarkable frequency from the nasopharynx, and often from the fæces also, and that a vaccine prepared from these almost always produces immunity for at least a year, and sometimes indefinitely, when a full course—roughly about 16 doses—is administered Furthermore, the success or failure is largely dependent on the presence or absence of nasal obstruction Consequently the nose should always be examined and appropriate surgical treatment advised if obvious lesions are found

The fact that the administration of a stock vaccine, without bacteriological examination of the patient, is more convenient does not prove that this method is useful The experiments recorded by these three observers afford satisfactory evidence to the contrary On another point, it is not stated whether the stock vaccine was made from repeatedly subcultured organisms Most of them are, in fact, so derived When it is necessary to use a stock vaccine it is, I submit, advisable that it should be prepared ad hoc from fresh bacteria, of which any large laboratory presumably has a supply

I am, Sir, yours faithfully,
A KNYVETT GORDON, M B , B C , B A Camb
Bedford square, W C , April 14th, 1927

ALLEGATIONS OF NEGLIGENCE IN CERTIFYING A MENTAL PATIENT

To the Editor of THE LANCET

SIR,—The leading article in THE LANCET of April 2nd, dealing with the Hume-Spry case, alludes to the need that more effect should be given to such protection as the medical certifier already possesses in such circumstances, while urging that prompt legislation should strengthen that protection

After a trial lasting some 15 days, Dr Percy Smith and Dr Watson, who were charged with having negligently signed a certificate in lunacy, have been completely vindicated by a special jury who stopped the case of their own accord without any direction from the learned judge How comes it that any doctor can be sued for negligence in the honest discharge of a duty which he owes to the public? He is not bound to certify anyone to be insane; but he must often do so, not only in the public interest, but in the interest of the patient himself who, if not placed under control, may suffer not only irreparable injury himself, but may be led to do that which, if he were in the possession of all his faculties, he would be the first to regret

The legislature has prescribed a form of protection for the medical profession, and those who were advising the defendants in the present case made the proper attempt to secure it for their clients, but without avail By S 330 of the Lunacy Act, 1890

> "If any proceedings are taken against any person for signing any certificate such proceedings may be stayed if the Court or Judge is satisfied that there is no reasonable ground for alleging want of good faith or reasonable care"

Shortly after the Hume-Spry action was launched an application was made pursuant to this section, on the part of the defendants, as a result of which a Master of the King's Bench stayed the action, and his order was affirmed by Mr Justice Bateson sitting as judge in chambers The Court of Appeal, however, reversed the learned judge's decision, holding that the matter must go before a jury The result is what we have seen A trial which must have involved enormous cost on both sides, and a number of baseless charges "random hurled" in open court against a number of innocent persons Is it too much to hope that the end of this case may encourage those in whom the power lies to stay such actions in future? Great judges in the past have inculcated that the power should be freely exercised

A few of the decisions of the courts in the matter may be usefully brought to recollection In the case of Hall *v* Semple (1862), 3 F & F, 337, Mr Justice Crompton, in charging a jury, said —

> Take me, then, as telling you, in point of law, that if a medical man assumes under this Statute (the Act then in force) the duty of signing a certificate, without making, and by reason of his not making, a due and proper examination, and such inquiries are necessary, and which a medical man in such circumstances ought to make and is called upon to make, not in the exercise of the extremest possible care but in the exercise of ordinary care, so that he is guilty of culpable negligence, and damage ensue, then that an action will lie, altho' there has been no spiteful or improper motive, and though the certificate is not false to his knowledge
> The question is whether there has been a neglect of that duty which a person in a case of this kind owes, not to interfere in a matter which touches the liberty of his fellow citizen without taking due care and making a careful examination and inquiry?"

It was after this that the protecting section appeared in the Lunacy Act of 1890 Its effect has been discussed in several cases In Shackleton *v* Swift ((1913), 2 K B, 304) a woman had been received as an alleged lunatic into a workhouse under an order of a relieving officer This order required the defendant, the master of the workhouse, to receive and detain the plaintiff for three days During that period the medical officer examined her and gave a certificate for her detention for 14 days After this she was detained for six days, when she was discharged again by order of the medical officer In these circumstances she sued the master of the workhouse, on the ground that her detention for more than three days was unauthorised in the absence of an order of a justice It was held that S 330 of the Lunacy Act above mentioned gave special protection to officers and others acting under its powers in cases where, although they might have misconstrued the Act, and although they might have done things which they had no jurisdiction to do, they had acted in good faith and in a reasonable manner In giving judgment, Lord Justice Vaughan Williams said —

> "Observe that this case is not a case under the powers of the Judicature Act and Rules We are not applying a general act to some case which happens to fall within its scope, what we are trying here is the question whether this action ought to be stayed having regard to the terms of the Lunacy Act, S 330 That is a very different thing to my mind to the case of a question under the Judicature Act and Rules whether an action ought to be stayed or not Here we are dealing with a particular subject matter, lunacy, and the Act of Parliament itself on the face of the Act—I do not so much say states as provides for, and assures, that public officers will be employed in carrying out the provisions of this Act of Parliament The Statute in S 330 seems to me to be a provision which recognises in itself the difficulty that may be experienced by the officers in carrying out this Act of Parliament"
>
> . The principle of the Act is if the proper officers carrying out the provisions of the Lunacy Act, 1800, have acted in good faith and with reasonable care, even though they have made a mistake—even though the Act of Parliament gave them no jurisdiction in the particular case, and therefore there was what was called the ground of want of jurisdiction, nevertheless they are to be protected That does not mean, to my mind, protected in the end after there has been an action or the action has been tried, it is a protection which relieves them from liability in my opinion before the action has been tried"

The meaning of the section was discussed once more in Everett *v* Griffiths (1920) 3 K B 161, where an action was brought against a chairman of a board of guardians and a doctor It was there pointed out that the act only imports that the medical practitioner shall act with reasonable care It does not say that he must act with reasonable skill, and in Everett v

Griffiths ((1920) 3 K B at p 184) Lord Justice Bankes said that it was a matter for considerable doubt whether the duty to act with reasonable care involved a duty to act with reasonable skill He said —

"To adopt the view that a medical man called in by a magistrate to express an opinion in reference to a person alleged to be a lunatic may be liable in damages for making an incorrect diagnosis, though he may have acted in perfect good faith and used all the care at his command, is to adopt a view which may render the working of the Act in many cases extremely difficult if not impossible a result which the legislature may have intended to avoid The Legislature intended that a person having the qualifications laid down in the Statute should be entitled to express an honest opinion arrived at with reasonable care on a matter of extreme difficulty and about which opinions might well differ without exposing himself to the risk of having his skill called in question before a jury and being possibly mulcted in heavy damages A medical man is under a duty towards the alleged lunatic to act in good faith and with reasonable care, but provided he has the qualifications prescribed by the Act, the degree of skill possessed by him or brought to bear upon the examination cannot be called in question"

In view of all this body of opinion it is a little difficult to see why the Court of Appeal refused to stay the action against the two practitioners who were so completely vindicated last week But it must be remembered that where the liberty of the subject is concerned the right to have the verdict of a jury is one which is regarded as almost sacrosanct

I am, Sir, yours faithfully,

April 2nd, 1927 JURIST

RHEUMATISM AND "GROWING PAINS"

To the Editor of THE LANCET

SIR,—It is in my opinion a grave reflection on the public health authorities that the great bulk of the general public is ignorant of, and totally uninstructed in, the serious significance of the vague pains in the limbs of a child or adolescent It is a frequent experience of general practitioners to discover irreparable heart lesions, the only rheumatic history obtainable being a diagnosis of "growing pains" by an aunt or a sympathetic neighbour A little while ago a child was brought to my surgery with aphasia, the loss of speech having been discovered that morning The child was found to be suffering from endocarditis with a mitral lesion which had given rise to no distress On inquiry I discovered that a fortnight previously the patient had complained of slight pains in the ankles which were rubbed with a "bottle" and dismissed as growing pains

The public must be instructed about the earliest symptoms of disease This is being admirably done in certain diseases and it remains for the authorities to see that the high mortality from heart disease is decreased by early treatment of its greatest causative factor—acute rheumatism

I am, Sir, yours faithfully,

ALFRED A MASSER, M B, Ch B

Penistone, April 11th, 1927

SIR Charles Hyde, Bart, has telephoned to the B B C station at Birmingham to say he was so impressed by the address on the work of Lord Lister broadcast by Sir Berkeley Moynihan on April 8th that he had decided to endow a bed in each of the five Birmingham hospitals—the General, the Queen's, the Children's, the Orthopædic, and the Women's Hospitals The address was broadcast from Leeds and relayed to all stations

BIRMINGHAM CRIPPLES —Mr Neville Chamberlain, Minister of Health, has opened a new centre for the out-patient and administrative work of the Birmingham Cripples' Union and Royal Orthopædic Hospital The centre is housed in the old Children's Hospital in Broad-street, which has been extensively remodelled, the additions including a series of workshops for the manufacture of surgical appliances The recent amalgamation of the Cripples' Union and the Orthopædic Hospital has created the third largest hospital charity in the city, with 268 beds and has necessitated the concentration of scattered offices, workshops, and out-patient departments The massage attendances last year numbered about 30,000, 5000 cases were treated otherwise, and there is a waiting-list of 500

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

The Easter Adjournment

THE House of Lords adjourned for the Easter recess on Tuesday, April 12th until April 28th Among the Bills to which the Royal Assent was given by commission were the Royal and Parliamentary Titles Act and the Sale of Food and Drugs Act The House of Commons adjourned on Thursday, April 14th, until Tuesday, April 26th

HOUSE OF COMMONS

TUESDAY APRIL 12TH

Finances of Scottish Maternity Hospitals

SIR ARCHIBALD SINCLAIR asked the Secretary of State for Scotland whether he was aware that the new regulations governing the training of midwives had increased the financial burdens on Scottish maternity hospitals, whether the financial difficulties experienced by these hospitals had been considered by him, and whether he was now prepared to recommend to Parliament that grants should be given to Scottish maternity hospitals commensurate with those given to similar hospitals in England —SIR JOHN GILMOUR replied I am aware that the receipts of the Scottish maternity hospitals have been diminished by a decrease in the amounts received in fees from pupil midwives The grants referred to in the question are not, of course, grants to the hospitals as such, but are grants for the purpose of aiding students undergoing a particular course of training I think that the diminution in entrants may be attributed to the economic consideration that the average earnings of a registered midwife in Scotland do not provide a living wage rather than to the regulations of the Central Midwives Board (Scotland) which lengthened the period of training I have, however, taken steps to have the position of the hospitals carefully and sympathetically considered, but I am not yet in a position to make any recommendation to Parliament

Accidents in Mines

Mr GRUNDY asked the Secretary for Mines what was the number of fatal accidents in mines in the months of January, February, and March, 1926, and what was the number of non-fatal accidents during the same period, what had been the number of fatal accidents in mines in the months of January, February, and March in 1927, and the number of non-fatal accidents for the same period, and the proportion to the number employed in both periods —Colonel LANE-FOX replied During the first three months of 1926 there were 306 deaths from accidents at mines under the Coal Mines Act and 1214 persons were seriously injured The death-rate per 1000 persons employed was 0 27 and the serious injury-rate 1 07 The corresponding figures for the first three months of 1927, which were increased by the serious disasters at Cwm and Bilsthorpe, were 324, 1291 —0 31 and 1 25—respectively I regret that comparable figures as regards the less serious non-fatal accidents are not yet available

THURSDAY, APRIL 14TH

Expenditure on Additional Insurance Benefits

SIR JOHN POWER asked the Minister of Health the total expenditure during 1926 in respect of each class of additional benefit under the National Health Insurance Act —Mr CHAMBERLAIN replied The total expenditure during 1926 in England and Wales in respect of each class of additional benefit under the National Health Insurance Act—other than additional benefits which take the form of increases of ordinary cash benefits—was approximately as follows —

	£
Dental treatment	1,146 700
Ophthalmic treatment	155,900
Treatment in hospitals	228,800
Treatment in convalescent homes	43,400
Surgical appliances	33,900
Provision of premises for convalescent homes	9,700
Provision of nurses	7,100
Repayment of contributions	12,800
Payments in want or distress	8 500

Note —The amount of additional benefit paid by way of increases of ordinary cash benefits (sickness, disablement, and maternity) is not separately recorded

Poor-law Relief Statistics

Mr COMPTON asked the Minister of Health the number of persons in England and Wales in receipt of Poor-law relief at Dec 31st, 1924, 1925 and 1926 respectively, and the amount of moneys paid and relief in kind granted during the last week of the above-named years —Mr CHAMBERLAIN replied The following is the information asked for The numbers of persons in receipt of Poor-law relief (excluding lunatics in asylums) in England and in Wales at the end of December in the years mentioned were —

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Medical News.

ROYAL COLLEGE OF PHYSICIANS OF LONDON —An ordinary comitia of the College was held on April 11th, Sir John Rose Bradford, the President, in the chair An abstract report was presented of the extraordinary general meeting of the College held on Feb 10th, 1927, at which the draft of the revised bye-laws was submitted to the comitia for the second time and, with certain small amendments, was approved to be the bye-laws of the College for the time being

The President then delivered his annual address, in which he reviewed the work of the College during the past year He pointed out that there were now 379 Fellows There was a considerable increase in the number taking the membership, the total number of Members now being 830 as against 732 a year ago He mentioned the honours conferred by the King upon Fellows, Members and Licentiates of the College, including that of K C B upon Lord Dawson of Penn, the K B E upon Sir Stanley Hewitt, and the knighthood upon Dr Henry Head He also alluded to the gifts made to the College, including a replica of the portrait of Sir Richard Douglas Powell, painted by Mr Spencer Watson and given by Colonel Sir Douglas Powell, a silver claret jug from Mr H T Herring, and a china tea service from Mrs Alec Tweedie, which had been a presentation to Dr Alexander Tweedie in 1802 He also referred to the revision of the bye-laws and to the power that the College now assumed of granting Honorary Fellowships in special circumstances

The President then delivered obituary addresses upon the career and work of the 15 Fellows who had died in the past year—namely, Dr F S Palmer, Dr E S Reynolds, Sir John Williams, Sir W B Leishman, Sir F W Mott, Dr John Thomson of Edinburgh, Dr Robert Hunter Steen Dr R H Cole, Dr J G Adams, Dr James Barry Ball, Dr Francis Warner, Dr Thomas Claye Shaw, Sir Isambard Owen, Dr Llewellyn Powell Phillips, and Dr Thomas R Bradshaw

Sir David Ferrier, the senior Fellow present, then proposed a vote of thanks to the President and asked, at the special wish of the College, that he would allow his address to be printed and circulated

Sir John Rose Bradford was re-elected President for the ensuing year

Diplomas in tropical medicine were granted, jointly with the Royal College of Surgeons, to the following 24 candidates who have passed the required examination

S Annecke, E G Anthonisz, A C L O'S Bilderbeck, Catherine V Burne, N P Dalal, T B Gilchrist, R D Gross, Kathleen M Halloran, R G Keays, H H W Kumm, F R Lockhart, A D Loganadan, P H Martin, F R L Miller, Margaret M Nolan, J Portelli, Helen M Russell, E G Sayers, H M Shelley, Viva E K Stuart H S Townsend, Bertha Williamson, C J Wylde, and W. A Young

ROYAL COLLEGE OF SURGEONS OF EDINBURGH —At recent examinations out of 10 candidates entered the Final Dental Professional Examination the following 16 passed and were granted the Diploma of L D S R C S Edin —

John McAra, A L Cadenhead, David Logie, Bernard Silverston W G Thow, Sri Kishan Kapur, R G Chambers, S W Cruickshank, V L Shearer, A R Ferguson, C C Gair N I Macmillan A J de Villiers, E H B Gooch, T T Jamieson, and Thomas MacLaren

BRITISH PATHOLOGISTS ASSOCIATION —At a meeting of the council of this Association held on April 9th, the following resolution was adopted —

"That inasmuch as it is confidently expected that steps will shortly be taken by the Ministry of Health for the provision of pathological investigations for patients insured under the National Health Insurance Acts, and furthermore, inasmuch as any arrangements made to this end at this time by individual National Health Insurance authorities must necessarily influence the matter when it comes up for final settlement, it is in the opinion of the British Pathologists Association in the highest degree inadvisable that any such local arrangements should be entered upon at this time except upon the basis of payment per examination performed and not by payment of lump sum irrespective of work done further the Association considers that the fees charged should be such as to cover adequately the real cost of the work performed otherwise the service becomes a charge upon the funds of the institution undertaking it"

A schedule of proposed fees for pathological investigations for insured patients is now in course of preparation by the Council and will be circulated among members of the Association when complete These fees, it is stated, are based upon a carefully prepared costing scheme and may be regarded as representing the lowest charges at which the procedures indicated can be performed

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LEWISHAM NURSES' HOME —A beginning has been made in the erection at Lewisham Poor-law hospital of a home for the accommodation of 211 members of the nursing staff at a cost of £129,000 The home will include a lecture-room and a library and each nurse will have a separate bedroom

BRITISH EMPIRE CANCER CAMPAIGN —Lord Cave presided at a quarterly meeting of the Grand Council on April 12th The council received the resignation of the organising adviser to the campaign, Lieut-General Sir John Goodwin, F R C S, who has been appointed Governor of Queensland —An application for affiliation was received from the National Cancer Campaign (Ireland), which has just been formed, and which includes representatives both of Ulster and the Free State The application was granted, and good wishes were sent to the new organisation —Grants of £298 and £900 respectively were made for apparatus and for the upkeep for one year of the radiological cancer research department of the Middlesex Hospital, and a further grant of £3000 was approved in support of the maintenance of the general cancer research department of that hospital —The grant of £100 to Mr E Nevill Willmer, of Manchester University, was renewed for another year to enable him to continue work on tissue culture and a further grant of £300 was made to Prof C E Walker, of Liverpool, to enable him to continue cancer research

UNIVERSITY OF LONDON —At a meeting of the Senate held on March 23rd, it was resolved that a statement be published to the effect "that candidates for the degree of B D S will be required to pass the First Examination for Medical Degrees before proceeding to the Second Examination in Dental Surgery"

Three lectures on Sensation and the Sensory Pathway will be given by Dr J S B Stopford, F R S, professor of anatomy in the University of Manchester, at University College on May 3rd, 4th, and 6th, at 4 30 P M

Four lectures on the Autonomic Nervous System will be given by Dr R J S McDowall, professor of physiology in the University, at King's College, at 5 P M, on Tuesdays, May 3rd 10th, 17th, and 24th

A course of four lectures on the Menstrual Function, its Physiology and Pathology will be given by Mr H Beckwith Whitehouse, professor of midwifery and diseases of women in the University of Birmingham, at the London (R F H) School of Medicine for Women on Mondays, May 9th, 16th, 23rd, and 30th, at 5 30 P M.

Dr Andrew Balfour will take the chair at the first of four lectures on National, Regional, and Town Development Planning to be given by Mr W H McLean, late Egyptian and Sudan Government Services, at University College on Tuesdays, May 10th, 17th, 24th, and 31st, at 5 30 P M.

Three lectures on Problems of Mental Work will be given by Prof A. Michotte, of the University of Louvain, at King's College on May 10th, 12th, and 13th, at 5 30 P M

Three lectures entitled Some Surgical Problems will be given by Mr John Fraser, regius professor of clinical surgery in the University of Edinburgh, at the Middlesex Hospital Medical School on Monday, Tuesday and Wednesday, May 16th 17th, and 18th, at 5 P M.

A course of four lectures on Inflammation and Infection will be given by Dr E H Kettle, professor of pathology in the Welsh National School of Medicine, at Guy's Hospital Medical School, on May 20th, 27th, 31st, and June 3rd, at 5 30 P M.

The Senate will shortly consider applications for grants from the Dixon Fund, which are allocated annually for the purpose of assisting scientific investigations, and from the Thomas Smythe Hughes Medical Research Fund Applications are also invited for the Laura de Saliceto Studentship for the advancement of cancer research A University studentship in physiology, of the value of £50 for one year, will be awarded to a student qualified to undertake research in physiology

University College—On Friday, May 13th, at 8 30 P.M, an address entitled University College and Medical Education, will be given by Sir John Rose Bradford, F R S, President of the Royal College of Physicians of London —On Thursday, June 23rd, at 3 P M., their Majesties the King and Queen will inaugurate the centenary celebrations of the College

UNIVERSITY OF DURHAM —The summer session began on April 21st, and post-graduate classes will meet each Thursday until June 16th at the Royal Victoria Infirmary, Newcastle

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES —On Friday, April 29th, at 8 30 P M., a meeting will be held at Chandos-street, London, W 1, when a paper will be read by Dr R N Ironside on the Prophylaxis of Neurosyphilis A discussion will follow

CHELSEA CLINICAL SOCIETY —The next meeting of this society will be held next Tuesday, April 26th, in the Governors' Committee-room, at St George's Hospital, at 8 30 P M There will be a discussion on Peptic Ulcer in which Dr Robert Hutchison, Dr J A Ryle, and Mr H. W Carson will take part The date of this meeting has been altered from the previous Tuesday

ROYAL SANITARY INSTITUTE —A sessional meeting will be held in the Guildhall, Exeter, jointly with the West of England Branch of the Society of the Medical Officers of Health, on Friday, April 29th, at 2 P M., when discussions will take place on Recent Legislation Affecting Maternity and Child Welfare Schemes (Dr J F Blackett, Dr G Adkins, and Dr T Dunlop) and on the Housing (Rural Workers) Act (Dr C E Tangye, Dr H B Mapleton, and Mr A J Redfern)

MAUDSLEY HOSPITAL —A series of five clinical demonstrations of Types of Mental Disease will be given at the Maudsley Hospital, Denmark Hill, by the Medical Superintendent, Dr Edward Mapother, at 2 30 P M, on successive Wednesdays, commencing on April 27th The fee for the course will be 1 guinea

MEDICO-LEGAL SOCIETY —An ordinary meeting of the society will be held at 11, Chandos street, Cavendish-square London W 1, on Thursday, April 28th, at 8 30 P.M, when Dr A Kyvett Gordon will read a paper entitled Certain Difficulties in Life and Sickness Assurance A discussion will follow Guests may be introduced on production of a member's private card.

DENTAL RESEARCH —The Medical Research Council invites applications, not later than May 11th, for two posts in connexion with research work being carried out under the direction of its Dental Committee Particulars will be found in our advertisement columns

CHADWICK PUBLIC LECTURES —A lecture (illustrated by epidiascope) on the Teaching of Industrial Medicine will be given by Sir Thomas Legge, M D, in the lecture room of the Medical Society of London, 11, Chandos-street, Cavendish-square, London, W, on May 3rd, at 5 15 P M Dr S Monckton Copeman, F R S, will preside Admission is free

GIFT TO WARRINGTON INFIRMARY —This institution celebrates its jubilee this year, and Mr J. J. Crosfield, of Embley Park, Romsey, Hampshire, has sent a cheque for £10,000 as an endowment

NORFOLK AND NORWICH HOSPITAL —A member of the family of the late Dr Charles Williams has given £1000 to endow a bed in his memory Dr Williams was appointed house surgeon in 1858, assistant surgeon in 1869 surgeon in 1878, and consulting surgeon in 1907, the year of his retirement and death

INSTITUTE OF HYGIENE —A series of lectures on "Women's Health" will be delivered at this institute, 28, Portland-place, W, on Wednesdays, from April 27th to June 1st, at 3 30 P M. The first lecture will be given by Dr Charles S Thomson on Mental Hygiene in Relation to Women's Health, Lady Carey Evans presiding Admission is free to all those interested in health problems

TWO NEW SCHOOLS AT LEEDS —The Leeds Education Committee is putting up two new schools costing £33,000 each and providing accommodation for 1070 pupils The class-rooms are designed to secure the maximum amount of sunshine and fresh air during the working day The windows on the sunny side extend from floor to ceiling, and are made to open completely Lessons can go on practically in the open air, yet the scholars will be sheltered All the buildings are only one storey in height

GLASGOW HOSPITAL FOR WOMEN.—This hospital, which treats nearly 5000 women annually, has just celebrated its jubilee, on this occasion a presentation has been made by the directors and staff to Dr G Scott MacGregor, the senior surgeon, who has been connected with the institution for 34 years

HUNTERIAN SOCIETY —The annual report of this society records that 30 new Fellows have been elected during the session, and that the Fellows now number 272 Dr Irwin Moore succeeds Dr Langdon-Brown as hon treasurer The annual general meeting will be held on April 25th, at 94, Harley-street, at 8 30 P M Mr A E Mortimer Woolf is nominated by the Council as president for the session 1927–28 and the hon secretaries, Dr A Westerman and Mr W E Tanner, have also been nominated again The session has been a successful one, and in view of the 200th anniversary of the birth of John Hunter, which takes place next year, it is hoped that next session will be even more successful.

ST MARY'S HOSPITAL INSTITUTE OF PATHOLOGY AND RESEARCH —The annual course of lectures on Pathological Research in its Relation to Medicine will be given in the lecture room of the bacteriological department of the Institute on Thursday afternoons at 5 P M The programme is as follows —April 28th —Sir Almroth E Wright, F R S On the Treatment of Bacterial Infections by Antibodies and Chemical Agents May 5th —Prof Carl Prausnitz (Breslau) Experimental Researches on the Nature of the Bacteriophage 12th —Dr R A O'Brien Streptococci—their Toxins and Antitoxins 19th —Lt -Col. S P James, M.D Some Methods and Problems of Malaria Research 26th —Prof Hugh MacLean Insulin in the Treatment of Diabetes and some other Nutritional Disturbances June 2nd —Prof C A Lovatt Evans, F R S The Alkalinity of the Blood 9th —Prof B J Collingwood Molecular Movement in the Living Body These lectures are open to doctors and medical students without fee

DONATIONS AND BEQUESTS —Miss Agnes Russell, Muirfield, Castlehead, Paisley, left £1000 each to the Royal Alexandra Infirmary, Paisley, the Paisley Industrial School the Salvation Army, and Quarries's Orphan Home, and £500 to several other charities including the Paisley Convalescent Home —Mr Thomas Cooper, J P, Kingsland, Shrewsbury, left £1000 each to several institutions including the Royal Salop Infirmary for the endowment of a "Thomas Cooper" bed, and the National Children's Home and Orphanage for a "Thomas Cooper" bed, and £250 to the Eye Ear and Throat Hospital for Shropshire and Wales —Mr Joel Settle, The Hill, Alsager, Cheshire left £1000 to the North Staffs Infirmary, Stoke-on-Trent Salford Royal Hospital has received £2000 from the Booth Charities and the Salford and District Nurses' Home, £400 The donations to other hospitals amounted to £1310 during the last week of the above-named years —Mr CHAMBERLAIN replied The following is the information asked for The numbers of persons in receipt of Poor-law relief (excluding lunatics in asylums) in England and in Wales at the end of December in the years mentioned were —

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Medical News.

ROYAL COLLEGE OF PHYSICIANS OF LONDON —An ordinary comitia of the College was held on April 11th, Sir John Rose Bradford, the President, in the chair An abstract report was presented of the extraordinary general meeting of the College held on Feb. 10th, 1927, at which the draft of the revised bye-laws was submitted to the comitia for the second time and, with certain small amendments, was approved to be the bye-laws of the College for the time being

The President then delivered his annual address, in which he reviewed the work of the College during the past year He pointed out that there were now 379 Fellows There was a considerable increase in the number taking the membership, the total number of Members now being 836, as against 732 a year ago He mentioned the honours conferred by the King upon Fellows, Members and Licentiates of the College, including that of K C B upon Lord Dawson of Penn, the K B E upon Sir Stanley Hewitt, and the knighthood upon Dr Henry Head He also alluded to the gifts made to the College, including a replica of the portrait of Sir Richard Douglas Powell, painted by Mr Spencer Watson and given by Colonel Sir Douglas Powell, a silver claret jug from Mr H T Herring, and a china tea service from Mrs Alec Tweedie, which had been a presentation to Dr Alexander Tweedie in 1802 He also referred to the revision of the bye-laws and to the power that the College now assumed of granting Honorary Fellowships in special circumstances

The President then delivered obituary addresses upon the career and work of the 15 Fellows who had died in the past year—namely, Dr F S Palmer, Dr E S Reynolds, Sir John Williams, Sir W B Leishman, Sir F W Mott, Dr John Thomson of Edinburgh, Dr Robert Hunter Steen, Dr R H Cole, Dr J G Adams, Dr James Barry Ball, Dr Francis Warner, Dr Thomas Clave Shaw, Sir Isambard Owen, Dr Llewellyn Powell Phillips, and Dr Thomas R Bradshaw

Sir David Ferrier, the senior Fellow present, then proposed a vote of thanks to the President and asked, at the special wish of the College, that he would allow his address to be printed and circulated

Sir John Rose Bradford was re-elected President for the ensuing year

Diplomas in tropical medicine were granted, jointly with the Royal College of Surgeons, to the following 24 candidates who have passed the required examination

S Annecke, E G Anthonisz, A C L O'S Bilderbeck, Catherine V Burne, N P Dalal, T B Gilchrist, R D Gross, Kathleen M Halloran, R G Keays, H H W Kumm F R Lockhart, A D Loganadan, P H Martin, F R L Miller, Margaret M Nolan, J Portelli, Helen M Russell, E G Sayers, H M Shelley, Viva E K Stuart H S Townsend, Bertha Williamson, C J Wylde, and W A Young

ROYAL COLLEGE OF SURGEONS OF EDINBURGH —At recent examinations out of 10 candidates entered the following 16 passed the Final Dental Professional Examination and were granted the Diploma of L D S R C S Edin —

John McAra, A. L Cadenhead, David Logie, Bernard Silverston W G Thow, Sri Kishan Kapur, R G Chambers, S W Cruickshank, V L Shearer A R Ferguson, C C Gair N I Macmillan A J de Villiers, E H B Gooch, T T Jamieson, and Thomas MacLaren

BRITISH PATHOLOGISTS ASSOCIATION —At a meeting of the council of this Association held on April 9th, the following resolution was adopted —

> "That inasmuch as it is confidently expected that steps will shortly be taken by the Ministry of Health for the provision of pathological investigations for patients insured under the National Health Insurance Acts, and furthermore, inasmuch as any arrangements made to this end at this time by individual National Health Insurance authorities must necessarily influence the matter when it comes up for final settlement, it is in the opinion of the British Pathologists Association in the highest degree inadvisable that any such local arrangements should be entered upon at this time except upon the basis of payment per examination performed and not by payment of lump sum irrespective of work done further the Association considers that the fees charged should be such as to cover adequately the real cost of the work performed otherwise the service becomes a charge upon the funds of the institution undertaking it"

A schedule of proposed fees for pathological investigations for insured patients is now in course of preparation by the Council and will be circulated among members of the Association when complete These fees, it is stated are based upon a carefully prepared costing scheme and may be regarded as representing the lowest charges at which the procedures indicated can be performed

UNIVERSITY OF LONDON.—At a meeting of the Senate held on March 23rd, it was resolved that a statement be published to the effect "that candidates for the degree of B D S will be required to pass the First Examination for Medical Degrees before proceeding to the Second Examination in Dental Surgery."

Three lectures on Sensation and the Sensory Pathway will be given by Dr. J S B Stopford F R S., professor of anatomy in the University of Manchester, at University College on May 3rd 4th and 6th, at 4 30 P.M.

Four lectures on the Autonomic Nervous System will be given by Dr. R J. S McDowall professor of physiology in the University, at King's College at 5 P.M., on Tuesdays May 3rd 10th 17th and 24th.

A course of four lectures on the Menstrual Function, its Physiology and Pathology will be given by Mr H. Beckwith Whitehouse, professor of midwifery and diseases of women in the University of Birmingham, at the London (R.F.H) School of Medicine for Women on Mondays May 9th, 16th, 23rd and 30th, at 5 30 P.M.

Dr. Andrew Balfour will take the chair at the first of four lectures on National Regional, and Town Development Planning to be given by Mr W. H McLean late Egyptian and Sudan Government Services at University College on Tuesdays May 10th 17th 24th and 31st at 5 30 P.M.

Three lectures on Problems of Mental Work will be given by Prof A. Michotte, of the University of Louvain at King's College on May 10th 12th and 13th at 5 30 P.M.

Three lectures entitled Some Surgical Problems will be given by Mr. John Fraser regius professor of clinical surgery in the University of Edinburgh, at the Middlesex Hospital Medical School on Monday Tuesday and Wednesday, May 16th 17th, and 18th, at 5 P.M.

A course of four lectures on Inflammation and Infection will be given by Dr E H. Kettle professor of pathology in the Welsh National School of Medicine, at Guy's Hospital Medical School on May 20th 27th, 31st and June 3rd, at 5 30 P.M.

The Senate will shortly consider applications for grants from the Dixon Fund, which are allocated annually for the purpose of assisting scientific investigations, and from the Thomas Smythe Hughes Medical Research Fund Applications are also invited for the Laura de Saliceto Studentship for the advancement of cancer research A University studentship in physiology, of the value of £50 for one year, will be awarded to a student qualified to undertake research in physiology

University College.—On Friday May 13th, at 8 30 P.M., an address entitled University College and Medical Education will be given by Sir John Rose Bradford, F R S., President of the Royal College of Physicians of London.—On Thursday June 23rd, at 3 P.M., their Majesties the King and Queen will inaugurate the centenary celebrations of the College.

UNIVERSITY OF DURHAM.—The summer session began on April 21st and post-graduate classes will meet each Thursday until June 16th at the Royal Victoria Infirmary, Newcastle.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.—On Friday, April 29th at 8 30 P.M. a meeting will be held at Chandos-street, London W. 1 when a paper will be read by Dr R. N Ironside on the Prophylaxis of Neurosyphilis. A discussion will follow.

CHELSEA CLINICAL SOCIETY.—The next meeting of this society will be held next Tuesday, April 26th, in the Governors Committee-room, at St. George's Hospital, at 8 30 P.M There will be a discussion on Peptic Ulcer in which Dr Robert Hutchison Dr J A. Ryle and Mr. H. W Carson will take part The date of this meeting has been altered from the previous Tuesday.

ROYAL SANITARY INSTITUTE.—A sessional meeting will be held in the Guildhall Exeter, jointly with the West of England Branch of the Society of the Medical Officers of Health, on Friday, April 29th at 2 P.M., when discussions will take place on Recent Legislation Affecting Maternity and Child Welfare Schemes (Dr J. F. Blackett Dr G Adkins and Dr T Dunlop) and on the Housing (Rural Workers) Act (Dr. C E Tangye, Dr H B Mapleton and Mr A. J Redfern)

MAUDSLEY HOSPITAL.—A series of five clinical demonstrations of Types of Mental Disease will be given at the Maudsley Hospital Denmark Hill by the Medical Superintendent Dr Edward Mapother, at 2 30 P.M on successive Wednesdays commencing on April 27th The fee for the course will be 1 guinea.

MEDICO-LEGAL SOCIETY.—An ordinary meeting of the society will be held at 11, Chandos-street Cavendish-square London W. 1 on Thursday April 28th at 8 30 P.M. when Dr A. Knyvett Gordon will read a paper entitled Certain Difficulties in Life and Sickness Assurance. A discussion will follow. Guests may be introduced on production of a member's private card.

DENTAL RESEARCH.—The Medical Research Council invites applications, not later than May 11th for two posts in connexion with research work being carried out under the direction of its Dental Committee. Particulars will be found in our advertisement columns.

CHADWICK PUBLIC LECTURES.—A lecture (illustrated by epidiascope) on the Teaching of Industrial Medicine will be given by Sir Thomas Legge M D in the lecture room of the Medical Society of London 11, Chandos-street, Cavendish-square London W on May 3rd at 5 15 P.M. Dr S Monckton Copeman F.R.S will preside. Admission is free.

GIFT TO WARRINGTON INFIRMARY.—This institution celebrates its jubilee this year, and Mr J. J Crosfield of Embley Park Romsey, Hampshire, has sent a cheque for £10,000 as an endowment.

NORFOLK AND NORWICH HOSPITAL.—A member of the family of the late Dr. Charles Williams has given £1000 to endow a bed in his memory. Dr. Williams was appointed house surgeon in 1858 assistant surgeon in 1869, surgeon in 1878 and consulting surgeon in 1907, the year of his retirement and death

INSTITUTE OF HYGIENE.—A series of lectures on "Women's Health" will be delivered at this institute, 28 Portland-place W on Wednesdays, from April 27th to June 1st at 3 30 P.M. The first lecture will be given by Dr Charles S Thomson on Mental Hygiene in Relation to Women's Health, Lady Carey Evans presiding Admission is free to all those interested in health problems.

TWO NEW SCHOOLS AT LEEDS.—The Leeds Education Committee is putting up two new schools costing £33,000 each and providing accommodation for 1070 pupils. The class-rooms are designed to secure the maximum amount of sunshine and fresh air during the working day The windows on the sunny side extend from floor to ceiling and are made to open completely Lessons can go on practically in the open air, yet the scholars will be sheltered All the buildings are only one storey in height.

GLASGOW HOSPITAL FOR WOMEN.—This hospital which treats nearly 5000 women annually has just celebrated its jubilee; on this occasion a presentation has been made by the directors and staff to Dr G Scott MacGregor, the senior surgeon, who has been connected with the institution for 34 years.

HUNTERIAN SOCIETY.—The annual report of this society records that 30 new Fellows have been elected during the session and that the Fellows now number 272 Dr Irwin Moore succeeds Dr Langdon-Brown as hon treasurer The annual general meeting will be held on April 25th at 94, Harley-street at 8 30 P.M Mr A. E Mortimer Woolf is nominated by the Council as president for the session 1927–28 and the hon secretaries Dr A Westerman and Mr W E Tanner have also been nominated again The session has been a successful one, and in view of the 200th anniversary of the birth of John Hunter which takes place next year it is hoped that next session will be even more successful.

ST. MARY'S HOSPITAL INSTITUTE OF PATHOLOGY AND RESEARCH.—The annual course of lectures on Pathological Research in its Relation to Medicine will be given in the lecture room of the bacteriological department of the Institute on Thursday afternoons at 5 P.M. The programme is as follows—April 28th.—Sir Almroth E Wright F R.S: On the Treatment of Bacterial Infections by Antibodies and Chemical Agents May 5th.—Prof. Carl Prausnitz (Breslau): Experimental Researches on the Nature of the Bacteriophage. 12th—Dr. R. A O'Brien: Streptococci—their Toxins and Antitoxins. 19th.—Lt.-Col. S P James M.D: Some Methods and Problems of Malaria Research 26th—Prof. Hugh MacLean: Insulin in the Treatment of Diabetes and some other Nutritional Disturbances. June 2nd—Prof. C A. Lovatt Evans F.R S The Alkalinity of the Blood. 9th—Prof B J Collingwood: Molecular Movement in the Living Body These lectures are open to doctors and medical students without fee

DONATIONS AND BEQUESTS.—Miss Agnes Russell Muirfield Castlehead, Paisley left £1000 each to the Royal Alexandra Infirmary Paisley, the Paisley Industrial School the Salvation Army, and Quarrier's Orphan Home and £500 to several other charities including the Paisley Convalescent Home.—Mr Thomas Cooper J.P, Kingsland Shrewsbury left £1000 each to several institutions including the Royal Salop Infirmary for the endowment of a "Thomas Cooper" bed, and the National Children's Home and Orphanage for a "Thomas Cooper" bed and £250 to the Eye Ear and Throat Hospital for Shropshire and Wales—Mr Joel Settle The Hill Alsager Cheshire left £1000 to the North Staffs Infirmary, Stoke-on-Trent Salford Royal Hospital has received £2000 from the Booth Charities and the Salford and District Nurses' Home £400 The donations to other hospitals amounted to £1310

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole street, W
Monday, April 25th —8 P M, Odontology *Paper* Mr E C Sprawson Further Investigation of the Pathology of Dentigerous Cysts, with a New Treatment Based Thereon
Tuesday —5 P M Medicine Short Communications Dr Parkes Weber Stenosis (Co Arctation) of the Aortic Isthmus, with Sudden Death from Rupture of a Cerebral Aneurysm Dr Morley Fletcher Two Cases of Co Arctation of the Aorta Dr A Osman and Dr Carter The Prevention of Scarlatinal Nephritis
Wednesday —8 30 P M, Surgery Annual General Meeting Election of Officers and Council for Session 1927 28 A Clinical Pathological Evening will then follow
Thursday —8 30 P M, Urology *Papers* Sir Thomas Horder The Medical Aspects of Hæmaturia
Friday —4 P M, Disease in Children Clinical Meeting at the Victoria Hospital for Children, Tite street, S W Tea will be served at 4 P M, followed by a Demonstration of Clinical Cases 8 P M, Epidemiology and State Medicine *Paper* Sir William Hamer The Influenzal Constitution

THE MEDICO-LEGAL SOCIETY
Thursday, April 28th —8 30 P M (at 11, Chandos street, Cavendish-square, W) Dr A Knyvett Gordon *Certain Difficulties in Life and Sickness Assurance*, which will be followed by a discussion Members may introduce guests to the meeting on production of a member's private card

ST JOHN'S HOSPITAL DERMATOLOGICAL SOCIETY (Incorporating the London Dermatological Society)
Wednesday, *April 27th —4 15 P M*, a meeting at St John's Hospital, Leicester square, W C Dr H G Adamson will read a paper entitled Some Remarks upon Treatment of Skin Diseases, followed by a Discussion

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

LONDON SCHOOL OF DERMATOLOGY, St John's Hospital, 49 Leicester square, W C
Tuesday, April 26th —5 P M., Dr A. C Roxburgh Warts
Thursday —5 P M, Dr J H Sequeira Skin Diseases of Animals Transmissible to Man

ROYAL NORTHERN HOSPITAL, Holloway-road, N
Tuesday, April 26th —3 15 P M (at the Royal Chest Hospital, City road) Dr L R Shore Muscle Strains in Respiratory Mechanism

ST MARY'S HOSPITAL INSTITUTE OF PATHOLOGY AND RESEARCH
Thursday, April 28th —5 P M, Sir Almroth Wright On the Treatment of Bacterial Infections by Antibodies and Chemical Agents

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSES
Tuesday, April 26th —4 15 P M, Dr D E Core, Examination of the Motor Nervous System
Friday —4 15 P M, Mr E D Telford Demonstration of Surgical Cases

Appointments.

Hughes, Audrey M, M B, B S Lond, D P H Lond, has been appointed Assistant Medical Officer of Health, Assistant School Medical Officer, and Assistant Tuberculosis Officer, under the York Corporation

Vacancies.

For further information refer to the advertisement columns

Birkenhead General Hospital —Senior and Second H S 's £200 and £150 respectively
Birmingham, General Hospital —Bio Chemist £500
Bolton, County Borough Education Committee —Asst M O H, &c £600
Bradford Royal Infirmary —H S and H P. Each £150
Bristol, Royal Hospital for Sick Children and Women —Two Hon P 's
Burton-on-Trent —Asst M O H £600
Cardiff City Mental Hospital, Whitchurch —Res Clin Asst. £52 10s for 6 mos
Central London Ophthalmic Hospital, Judd street, W C —Hon. Anæsthetist
Central London, Throat, Nose and Ear Hospital, Gray's Inn road W C —Hon Asst Out-patient Registrar Also Res H S £75
Charing Cross Hospital, W C —P to Children's Dept., also Obstet Reg
Chester Royal Infirmary —Hon Surg to Ear, Nose, and Throat Dept
Coventry and Warwickshire Hospital —Hon. S and Hon. Asst. P
Freemason's Hospital and Nursing Home, 237, Fulham road, Chelsea, S W —Res M O At rate of £250
Guildford, Royal Surrey County Hospital —H S £150
Hull Royal Infirmary —Cas H S At rate of £130
Inverness Northern Infirmary —Hon S
Larbert, Stirlingshire, Royal Scottish National Institution —Asst M O £350
Leeds, City of —Asst M O H £900
Manchester City —Asst Tuberculosis O £600
Manchester Royal Infirmary —Dickenson Research Travelling Scholarship in Medicine £300
Manchester, Salford Royal Hospital —Med Registrar
Manchester, Victoria Memorial Jewish Hospital —Sen H S (Male) At rate of £250
Medical Research Council —Dentist £500 Also Asst £250
Miller General Hospital for South East London, Greenwich road, S E —Out-patient Officer £150
Richmond Royal Hospital, Surrey —Asst H S At rate of £100
Royal Waterloo Hospital for Children and Women, Waterloo road, S E —H S At rate of £100
South Eastern Hospital for Children, Lower Sydenham, S.E —Res M O At rate of £100
West London Hospital, Hammersmith road, W —Hon. Med. Radiologist Also Asst P
Woolwich and District War Memorial Hospital, Shooters Hill —Hon S 's, P s, Radiologist and Anæsthetists
The Chief Inspector of Factories, Home Office, S W, announces vacancies for Certifying Factory Surgeons at Buntingford (Herts), Resolven (Glam), Mauchline (Ayrshire), and at Burgess Hill (Sussex)

Births, Marriages, and Deaths.

BIRTHS.

Aymer —On April 15th, the wife of Dr Aymer, Oakleigh, Grasmere road Boscombe, Bournemouth, of a daughter
Crockford —On April 14th, at Axminster, Devon, the wife of A L Crockford, M C, M B, of a daughter
Harvey-Kelly —On April 14th, at Clonhugh, Co Westmeath, to Sybil Harvey-Kelly, M B, B S, D P H, and Major Charles Harvey-Kelly, *D S O, 10th* Baluch Regiment—a son
Shaw —On April 9th, at Inverleith place, Edinburgh, the wife of J J M Shaw M D, F R C S, of a son
Shipton —On April 12th at Buxton, the wife of William Shipton, M D, J P, of a daughter

MARRIAGES

Nourse—Sargant —On April 9th, at St Mary's Church Walmer Henry Edward Nourse, M B, B Ch, to Ethel Millicent, elder daughter of Lord Justice and Lady Sargant, of Generals Meadow, Walmer
Snell—Chapman —*On April 18th at Burnham*, Somerset, Norman Snell, M D, to Evelyn Mary, daughter of the late Horton Chapman and of Mrs Chapman, of Burnham
Taylor—Kenyon —On April 9th, at Ruyton-XI-Towns, Shropshire Geoffrey Fawsitt Taylor, M B, B Ch. Camb, son of Arthur Fawsitt Taylor, of Hockley, Essex, to Frances Margaret, youngest daughter of Major General E R Kenyon, C B, C M G, R E
Walker—Clark —On April 12th at St Martin in the Field Trafalgar square, London, Mr C Walker, of Percy terrace, Sunderland, to Elizabeth K Clark, M B, Ch B, Waterhead of Dryffe, Lockerbie, Scotland

DEATHS.

Bearne —On April 12th, Austen Andrew Bearne, M R C S, L R C P, of Tresilian, Falmouth, aged 57
Matthews —On April 11th, at Dorset-square, N W, Dr Harry Newton Matthews, of Whitehall Court, S W, aged 51
Miller —On April 18th, Guy Witton Miller, M R C S, L R C P, *Killieser avenue*, Streatham *Hill, aged 50*
Morton —On April 11th, at Pembroke road, Clifton, Bristol Andrew Stanford Morton, F R C S Eng, Consulting Surgeon, Royal London Ophthalmic Hospital, aged 78
Smith —On April 11th, at Mount Rundell, Exmouth, in his 93rd year, Richard Wagstaff Smith, M.R C S, L M., L R C P, formerly of Harborne
Willson —On Easter Day, at The *Homestead*, Wetherby lane, Harrogate, John Wherry Willson, L R C P, M R C S, late of Bradford, aged 59 years

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

Lennox Castle as Poor-law Hospital —Glasgow Parish Council has purchased Lennox Castle and 1300 acres for about £25,000 as a Poor law institution The castle, until recently one of the residences of Mr Peareth-Kincaid-Lennox, was built nearly a century ago, is of great size, and is in good condition. It is some seven miles from Glasgow

Notes, Comments, and Abstracts.

RADIOLOGY IN RELATION TO COMPENSATION CASES.[1]

BY A. E. BARCLAY, M.D. CAMB., D.M.R.E.,
HON. MEDICAL OFFICER, X RAY AND ELECTRICAL DEPARTMENTS, ROYAL INFIRMARY, MANCHESTER.

MANY will remember the days when an X ray picture was regarded as a pure luxury. In this country the first shadow of the part radiology would take, not only in medicine but in the public mind, was cast by a legal action against a distinguished surgeon. It was a case of shoulder injury in which a clinical diagnosis of a fracture had been made. Later on a radiograph showed that there was a dislocation as well as a fracture, and the lawyers got busy proving negligence for the non-use of X rays. Negligence was proved to the satisfaction of the court and the damages awarded were very heavy. This case, and many others that followed, forced the use of radiology on to the medical profession, willy nilly, if only for their own protection, and to-day thousands of patients are examined radiographically, both in hospital and private practice, not to make a diagnosis but simply to protect the doctor. Certainly this examination often reveals things that were not expected, so that we cannot say that all this work is unnecessary, for clinically we never know in which cases an X ray examination will not be of assistance. Hence it comes about that practically every accident in which there is suspicion of injury to bones passes through the hands of the radiologist. In a large proportion of them the question of compensation is raised, and the X ray evidence is regarded as the deciding factor in the award of compensation.

Radiology in Court.

For the practical purposes of compensation work, the X ray picture is one of bones, the skeletal structures; it takes little or no account of the ligaments and other structures which are of equal if not greater importance as factors producing disability. Perhaps it is not for a radiologist to emphasise this fact, which should be obvious even to a layman, but I have seen so many cases pass through the courts, and compensation awarded, denied or reduced simply on what is shown radiographically, the medical men present assenting, that I feel I must stress this point. Let me take two cases. A lady was injured in a motor smash, and the radiograph showed that not only were the rami of the pubes and ischium shattered on the one side, but that the ilium had slipped up, this being allowed for by a fracture of the sacrum, the outer part of which had gone upwards, probably impacted with the body of the fifth lumbar vertebra. I have seldom seen such an extensive injury, and you can hardly credit it, but it is a fact that this lady walked into my rooms three months after the accident as if there was nothing the matter, although one leg is fully an inch short. I understand that she leads an almost normal life, doing her house work practically unaided. The case is due in the courts this month, and there is *no* doubt that she will get very large compensation, simply because, anatomically, the injury is so very extensive, although the actual functional disability is astonishingly trifling.

Then we have the miner with a back injury, one of very many similar cases, a man whose sweat pours off him as he gets on to the couch, a man with a family, with every inducement, and apparently with every wish, to be at his work, and in whom we cannot find a trace of any injury to the bones, with the result that he is written down as a "lead swinger," and his compensation is reduced in the hope of forcing him back to work. Not that I consider that all these men are genuinely disabled; far from it, but my point is that the radiographic evidence is not the one and only guide. It is, in fact, most fallacious. Surely it is on the functional *disability* that compensation should be based and, in my view, far too great weight is attached to the X ray findings in attempting to arrive at justice in these exceedingly difficult cases. The X ray picture with its positive demonstration of bony injury is often the only tangible factor that can be placed before the judge and jury, and it is little wonder that they seize upon this, probably the only definite point that can be raised in the whole case. And just as surely, if the X ray plates do not show any bony injury, the case is prejudiced from the start.

Nothing is more difficult in the whole field of justice than these compensation cases, in which the plaintiff, his legal advisers and, I regret to say it, his medical witnesses also, magnify, wittingly or otherwise, every point that may tell in the plaintiff's favour, while the defence seize every opportunity of depreciating the statements that are made. Justice may indeed be served, but it is handicapped in a manner that frequently makes the path of the applicant far from easy, and leaves many an embittered and seriously disabled man feeling that he has not been justly dealt with. If there is one factor more than another that produces malingerers it is the thought of compensation, and many an honest man, knowing of the fate of others, has stooped to deception of which he would never have dreamed had it not been for the thought of the assessment of his case in a court, and before arbitrators whom he knows he must try to impress with the severity of his disabilities. There is something wrong with the whole system, particularly with the part played in it by medical men who, even with the best intentions, cannot but be partisans. I have even known a case in which a medical man, giving evidence in a case of neuritis, stated that there was no X ray evidence of this complaint, a point on which, by no stretch of imagination could the X ray examination throw a particle of light. I do not wish to belittle the value of the X rays in medicine, but I hold very strongly that the place of radiology in compensation is often on a wrong footing, being regarded as a court of appeal by consent of all concerned, whereas it is only competent to give information as to skeletal structures, and, in the nature of things, can hold next to no knowledge of function and vital processes.

Assessment of Disability out of Court.

I should like to see the whole of the medical side of all cases dealt with, and the disability assessed, outside the courts of law by medical men who are entirely independent. The medical referee is a step in the right direction, but I would go further and divorce the assessment of disability entirely from the legal liability side of the case by the establishment of competent tribunals under the chairmanship of a well qualified and experienced medical man. These tribunals might be empowered to accept written medical opinions or take evidence from medical men themselves if necessary. The patient would be examined by them and they would assess the disability, unhampered by the legal, the sentimental aspects, and the partisanship that are inevitable under the present system. It is accepted by the courts that the medical man is the proper person to give an opinion on this vital subject of disability, yet he stands in the box as a witness for the plaintiff or the defence. The result is seldom satisfactory to the medical man, for, in the mass of mixed medicine and legality, with its quibbles, it is almost a chance whether the judge and jury take an over-serious or over-lenient view of the case. The chanciness of the verdict and the assessment of damages are a ruling factor in the minds of all lawyers who deal with these cases. I have frequently heard it stated that it would be no use bringing the case forward if So-and-so were the judge, but that there would be a good chance in another court, meaning thereby that one judge set less store by the statements of expert medical witnesses than did the other judge. This chanciness was particularly well brought out in an assize case a few years back, in which a lady had received a severe acute burn of her neck from the application of X rays in a large hotel, where a progressive management had installed a plant, and placed it in the hands of the bath attendant. It was a severe burn, and one that would certainly leave considerable disfigurement, but, in all probability, little else. We sat in consultation with counsel in his room before the opening of the case. A message came from the counsel for the defence for a conference, and presently the counsel for the plaintiff came back to ask advice as to whether to settle or not for what I considered a very large sum plus costs. The decision to accept was based not on the disability and disfigurement, but on the possibility of cancer occurring in the scar, and the effect of such a possibility on the mentality of the judge who was sitting. The defence, we found afterwards, were quite certain that the cancer possibility would be a strong point in the pleadings, whereas the experience of the radiologists advising the plaintiffs was that they had never known cancer to occur in the scar resulting from an *acute* X ray burn, and they had advised strongly that this possibility should not be stressed. Had it not been for the uncertainty on the purely medical side, and the legal argument that would probably have centred about a remote and probably negligible possibility, the damages in this case would have been of a much more modest nature, and, I think, justice would have been better served.

It would not, I suppose, be possible completely to divorce the medical side of the case from the legal, but, in such an instance as this, the medical side could be tried and witnesses called before a medical tribunal, and the independent medical chairman of that tribunal would be the one and only medical man who would be called in the legal proceedings, which would thereby be considerably shortened. So also in the ordinary workman's compensation pleadings, the disability would be assessed on a percentage basis in relation to the man's employment, and this would be given to the court *after* it had determined the purely legal side of the liability, any further information being provided by the independent chairman of the medical court. Incidentally, such a scheme, if it were practicable, would save the hard-wrought medical man from many weary hours, or even days, waiting in or about the courts for a summons to go into the witness-box In many of the compensation cases there is no legal side at all, to bring these cases into the courts purely for an assessment is costly, and often unsatisfactory *I understand that in America the expense took on such proportions that the insurance companies could stand it no* longer, and, presumably by mutual consent, they set up their own medical scheme, the medical officers of the societies concerned assessing the disability, with the result that this type of litigation has been reduced to reasonable if not negligible proportions

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[1] Being the substance of a post-graduate lecture given at the Infirmary.

Conclusions

The X ray plate only shows skeletal structures, yet it is often used in Court as the deciding factor in compensation in cases in which the injury may be one of the soft parts which do not show on the plate Too much reliance is placed on the X ray evidence in cases of injury The time has come when the system of assessing compensation in a legal court should be reconsidered, and it is proposed that the disability should be assessed before a purely medical tribunal whose evidence should be presented to the legal court by an independent medical chairman

DRUG ADDICTION IN KOREA

A REPORT on the treatment of morphia addicts in Chosen (Korea) has recently been issued by the Japanese Government

Opium-smoking has long been common in Chosen, especially in districts adjoining China The former Korean Government tried to suppress the habit, but without much success After the Japanese annexation, however, strong measures were taken to suppress it, and at the same time medical treatment was given to addicts Their number gradually decreased and the situation so much improved, that *in September, 1914, the Government decided to adopt absolute prohibition As many addicts as possible* were collected for medical treatment, and the result is that to-day opium-smoking has been all but suppressed in Chosen

At the same time, however, there has been a rapid increase in the number of persons using morphine, cocaine, and other similar drugs It is stated that this practice was originally taught by foreign missionaries to addicts of opium-smoking so as to rid them of their habit Be that as it may, the extent of the vice is now serious, and the authorities have made an order prohibiting the use of the drugs in the provinces, where it is most common In coöperation with local philanthropic bodies, they are also taking steps to cure addicts In Keiki, for instance, an infirmary has been established at public expense since 1925, where compulsory and general medical treatment is given The results at this and other centres are described as excellent

As might be expected, however, there are many patients who relapse after treatment, and it is considered next to impossible to suppress drug-taking unless rigorous measures are adopted Addicts, moreover, are generally adept in tempting others, and it is feared that the vice will again spread With a view to its complete suppression, the Government of Chosen is therefore considering a plan to enforce medical treatment of addicts throughout the peninsula, and mete out severe punishment to anyone using morphine and other dangerous drugs

THE APPROACH TO PAINTING[1]

Mr Bodkin is a Trustee of the National Gallery of Ireland, and has probably had borne in upon him, as it is borne in upon most of those who direct or take charge of big public collections, that a vast proportion of those who go to look at pictures do not enjoy themselves as they might, not having any proper ideas of the way to look, of what to expect and, in short, of how to derive pleasure through the eye The book is divided into two parts, in the first of which a series of chapters describes the philosophical, the analytical, the technical, and the casual approach of pictures, and concludes with an amusing description of what is called "the approach by siege" The advice is given in this chapter to discard the view held by many critics and some princes of art that ability to appreciate painting is a chance gift, and to recognise that the more experience of life that is brought to assist the judgment of the spectator the better will be the chance of sharing with the painter his meaning, and so of appreciating his work fully The recommendation is given to sit down before a picture, to besiege it, to rack it with questions, rather than to approve it or reject it in a brief scrutiny or for other than reasons that appear satisfactory to the inspector The second part of the book describes this method when applied to some 20 famous pictures ranging in date through early Florentine art, the Venetian epoch, the Flemish, Spanish, and French schools of the seventeenth and eighteenth century, and ends with an analysis of a popular portrait by Gainsborough and a famous landscape by Corot

WAS SPALLANZANI A PRIEST?

IN his Discourse at the Lister Centenary Prof W Bulloch quoted a famous saying of Lazzaro Spallanzani giving him the title "Abbate" A correspondent wrote to inquire whether it is now beyond doubt that the great naturalist, physiologist, and scholar had also taken holy orders Prof. Bulloch replies "There is no doubt as to the correctness of calling Spallanzani 'Abbate' He is so designated, sometimes Abate, sometimes Abbate, on all his works I have before me as I write —

1 Fisica animale et vegetabile del Sig Abate Spallanzani, 1782

2 Dissertazioni di fisica animale e vegetabile dell Abate Spallanzani, 1780

3 Dei fenomeni della circolazione dell Abbate Spallanzani, 1773

4 Dell' Azione del Cuore ne vasi sanguigni dell Abate Spallanzani Sacerdote della Congregazione della B vergine, e S Carlo di Modena.

"Pavesi's book entitled 'L'Abbate Spallanzani à Pavia 1901,' contains an exhaustive examination of the documents relating to Spallanzani in Pavia He tells us (p 11) that 'he officiated daily at mass at S Epifanio which proves that he had taken holy orders' When mass was stopped at S Epifanio, Spallanzani asked to be transferred to the mass at Jesus, which was the University Chapel after the Expulsion of the Jesuits It has not been found where Spallanzani was ordained, but it is probable that he became a priest at Reggio when a young man

"Some years ago," Prof Bulloch continues "I went rather fully into this question with an eminent legal authority on the Catholic Church who told me that unless Spallanzani *had been ordained as a priest he could not possibly have* taken part in a mass as we know he did Of course he is often called Abbé, which was a kind of courtesy title in France, not necessarily an ordained priest The French word 'Abbé' is not an exact translation of 'Abbate,' nor is our English 'Abbot' Hence I thought it best to give Spallanzani the title which he himself used"

ADVICE TO GIRLS OF SCHOOL AGE

Dr Hilda Halliday has written a small book[1] on health and habits for the use of senior girls in elementary schools In style and scope it is admirably suited to its purpose, and as Prof H R Kenwood says in his foreword, it will help to make young girls realise the need for self-preparation for the duties of life, and direct their minds to a purpose and duty in motherhood which is all too little recognised

This is one object of the book, another is to offer practical advice to girls who often have considerable responsibilities in guiding the early stages of development of younger members of the family The infant's first lessons are connected with the formation of good physical habits—regular hours for sleep, feeding, bodily functions, and exercise—and a basis of such habits is to lead on to a superstructure of good principles Dr Halliday is no believer in the theory that everything is to be made soft and easy for the child, rather he is to be encouraged to develop resource, pluck self-control and a sense of fair play—qualities which he is usually ready to display until he has been spoiled by the interference of adults "Children are courageous about pain unless they are 'let down' by their elders", "Remember that he (the four-year-old) is an intelligent person, and don't put him off with a snub or an untruth", "A promise made to a child must be kept, or else a reasonable explanation must be given"—these are ideas which are well worth implanting in the adolescent mind

The book is attractive in appearance, it has short chapters with inviting titles, the type is clear, and the excellent illustrations are reproduced from old masterpieces The ground covered is necessarily limited, and some supplementary instruction on such matters as the control of the body and the emotions—hardly more than hinted at by Dr Halliday—will need to be given But the teaching is sound and is calculated to appeal to the elder school-girl, in whose hands the book may safely and profitably be placed

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[1] The Approach to Painting By Thomas Bodkin London G Bell and Sons, Ltd 1927 Pp 192 7s 6d

[1] Little Mothers and Big Sisters By Hilda M Halliday, M R C.S, D P H London Humphrey Milford, Oxford University Press 1926 Pp 79 1s 3d

Hunterian Lecture

ON THE

IMPORTANCE OF TOXÆMIA

DUE TO ANAEROBIC ORGANISMS IN ACUTE INTESTINAL OBSTRUCTION AND PERITONITIS.

Delivered at the Royal College of Surgeons of England on Feb. 21st, 1927,

BY B. W. WILLIAMS, B.M. OXF., F.R.C.S. ENG.,
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IN dealing with a problem as ancient as the toxæmias of acute intestinal obstruction and peritonitis one finds that every possible clinical observation has been made. I have nothing original to add to these clinical observations. They are merely presented in a special form and sequence in support of a theory of the origin of toxæmia.

In the terminal stages of most fatal cases of acute peritonitis paralytic obstruction develops, and it is this paralytic obstruction which is responsible for the symptoms which are present. As far as the general manifestations of toxæmia are concerned, there is nothing, then, to distinguish between a patient suffering from acute peritonitis and one suffering from primary acute obstruction.

The general appearance of this toxæmia bears a striking resemblance to that found in severe cases of gas-gangrene. The chief features which they have in common are, the rapid pulse, cyanosis, frequent presence of slight general icterus, and above all, the restlessness and pathologically acute consciousness, which may last to the very end. Sometimes a patient will remark brightly that he is feeling better, yet at that time his pulse may be imperceptible, and he may be dead in half an hour. At other times patients become peevish and petulant, complaining inordinately at trifles, such as the pain of a hypodermic injection, and giving an impression of irritable mental abnormality. These together give a symptom-complex which is found in no other toxæmia, such as typhoid, streptococcal cellulitis, or septicæmia, diphtheria or pneumonia, and the peculiarity suggests the possibility that in acute intestinal obstruction anaerobic organisms might be responsible for the toxæmia.

In acute intestinal obstruction the only obvious source of toxins is the contents of the obstructed intestine, and this investigation was begun by examining the intestinal contents of cases of acute obstruction and of peritonitis for evidence of abnormal proliferation of toxin-producing anaerobes.

NORMAL DISTRIBUTION OF TOXIN-PRODUCING ANAEROBES IN THE INTESTINES

It is first necessary to consider the normal distribution of anaerobes and the conditions in the human intestinal tract. Of these organisms the one which is most constantly found, and which is most numerous, is *Bacillus welchii*. It is an organism which is almost ubiquitous—in dust, soil, and milk—so that it is easy to account for its presence in the intestine. Whether it occurs as a passenger in food, or as part of the natural flora, is immaterial.

B. welchii is an organism which produces a very powerful toxin, and requires for growth and the production of toxin a medium which is anaerobic and is maintained on the alkaline side of neutral. The toxin is extremely labile and in acid medium is rapidly destroyed. Moreover, by its growth it produces a great deal of acid, so that the toxin is destroyed unless the reaction is maintained by "buffering" of the medium, or by the addition of alkali.

Herter[1] has shown that in the small intestine the conditions are anaerobic, while the reaction is alkaline to neutral in the lower part, and is kept so by the alkaline secretions. These conditions would appear to be ideal for the proliferation of *B. welchii* and the production of toxin, but in life the time during which food material is in this part of the intestine is normally extremely short. A barium meal usually passes through the small intestine in four hours and it is extremely rare to see any prolonged delay. When stagnation takes place in the small intestine, however, either as a result of organic or paralytic obstruction, proliferation of *B. welchii* and toxin formation might easily occur.

In the stomach the aerobic conditions and acid reaction would prevent the growth of *B. welchii* and the formation of toxin and, clinically, pyloric obstruction gives rise to no acute toxæmia.

Again, in the large intestine, the medium becomes rapidly acid, so that *B. welchii* would be outgrown by other organisms and its toxin destroyed. Actually, though there may be considerable growth of *B. welchii* in the cæcum, in the fæces it is frequently impossible to obtain *B. welchii* on culture. Here, also, clinically, it is a matter of common observation that constipation or obstruction of the large intestine causes no acute toxæmia until stagnation extends back into the small bowel. On this hypothesis, therefore, there should be a great proliferation of *B. welchii* in the small intestine of patients suffering from acute intestinal obstruction. As time goes on these organisms would be found higher and higher up the small intestine and eventually in the vomit.

The investigation was begun by examining the vomit and small intestine contents of cases of acute obstruction and peritonitis for evidence of proliferation of *B. welchii*. Films were made in a standardised manner, which gave a rough idea of the numbers of *B. welchii* present. It is not possible to enumerate individual anaerobic organisms on morphological appearances alone with certainty, so no attempt has been made to count them. Final identification of *B. welchii* depended upon cultural reactions and the results of mouse inoculation, using pure protective antisera for control. The results were as follows. In 20 specimens of vomit obtained from cases of peritonitis *B. welchii* were present in large numbers in 19. In 12 specimens of vomit obtained from cases of acute obstruction *B. welchii* were present in large numbers in 11. In six specimens of small intestine contents examined *B. welchii* were present in enormous numbers in each specimen. Some of the film preparations of vomit showed very large numbers of organisms morphologically resembling *B. welchii*, but in other films they were not so numerous. This did not appear to bear any relation to the gravity of the case, and probably depends upon dilution of the intestinal material in the stomach.

As controls, 12 test-meals and vomit from two cases of pyloric obstruction were examined in the same way. No organisms resembling *B. welchii* were seen on films, but once *B. welchii* was obtained on culture. I only obtained one specimen of normal small bowel contents and a film, made from the lower end of the ileum, showed a few organisms resembling *B. welchii*—but they had to be looked for. *B. welchii* were grown from this specimen on culture and also from higher up the intestine. This agrees with the results of other workers,[2] that *B. welchii* are found, but are not abundant, in the small intestine.

TESTS FOR TOXIN

From these observations it appears that there is a great proliferation of *B. welchii* in the small intestine in cases of acute obstruction and of late peritonitis. Proliferation of *B. welchii* does not, however, necessarily imply that toxin formation takes place. The organism may be abundant in the large intestine without any clinical toxæmia, and in vitro active growth may take place without the formation of demonstrable toxin. It would therefore be necessary to demonstrate the presence of the toxin in the contents of the small intestine from cases of acute obstruction or of peritonitis.

The technical difficulties of demonstrating a toxin as delicate as *B welchii* toxin in material such as intestinal contents are very great. The toxin is apt to be destroyed in the process of rendering the material bacteria-free. The only method which I found practicable was Berkefeld filtration in an ice-chest, in an atmosphere of hydrogen The bacteria-free fluid was then inoculated into mice intramuscularly, using antitoxic sera as controls

Attempts to demonstrate Welchii toxin in vomit were unsuccessful, except in one doubtful case, but the acid reaction in the stomach would account for destruction of any toxin which might be present.

With the small intestine contents experiments were more successful Material obtained from human cases of obstruction or peritonitis, and from dogs in which these conditions had been produced experimentally, was examined and the results are represented in Table I.

TABLE I

Source of intestinal contents	Duration	Unprotected mice		Protected mice	
		Total	Died	Total	Died
Peritonitis					
Human case	7 days	10	5	5	0
Dog 1	83 hrs	4	4	2	0
„ 2	65 hrs	6	6	2	0
„ 3	78 hrs	6	4	4	0
Obstruction					
Human Case 1	3 days	12	2	6	0
„ 2	4 days	10	2	10	0
Dog 1	56 hrs	8	7	4	0
„ 2	51 hrs	8	0	4	0
Totals		64	30	37	0

This experiment is definite evidence of the presence of toxin, but gives no indication of the original amount present A large proportion would be lost during filtration, besides the probability that destruction and absorption of toxin are taking place continuously during life

Material obtained from the large bowel from three cases of acute obstruction of the large intestine was also examined This material was acid in reaction and, though there were apparently large numbers of *B welchii* present, no toxin could be found In all, 66 mice were injected with the filtrate from this source without ill-effects This is in accordance with the absence of clinical toxæmia in cases of obstruction, when stagnation is confined to the large intestine The contents of the normal small intestine were examined in one case and found to be non-toxic

Thus there is evidence of enormous proliferation of *B welchii* and of the actual presence of the exotoxin of *B welchii* in small intestine contents of cases of acute obstruction It is of course possible, but unlikely, that the toxin, though present, might not be absorbed At the same time *B welchii* toxin was the only toxin lethal to mice of which any evidence could be found, and it is reasonable to assume that this is the toxin responsible for the clinical appearance of these cases, which is so similar to that of cases of gas-gangrene In addition to this, *B. welchii* toxin usually contains a very powerful hæmolysin, and anæmia and slight general icterus are well-known features of cases which have survived for some time Staining of the intima of the heart and great vessels as a result of intravascular hæmolysis is a well known finding in fatal cases of peritonitis Intimal staining is also not uncommon in fatal cases of acute intestinal obstruction; I have found it present in 9 out of 14 human cases and it was sometimes very marked

This hæmolytic staining is usually attributed to the presence of hæmolytic streptococci, though there may be no other evidence of their presence Had a streptococcal septicæmia been responsible, one would expect metastatic foci, and changes in the spleen, which were not present in these cases Of the five dogs in which obstruction or peritonitis had been produced experimentally hæmolytic staining was found in four cases, and in these dogs blood cultures, taken within a few hours of death, were negative in three cases In the fourth a variety of organisms were grown, probably a contamination I think therefore that in the absence of evidence of other known hæmolytic organisms, the presence of intravascular hæmolysis in cases where *B welchii* toxin has been demonstrated in the intestinal contents is very strongly evidence of the absorption of *B. welchii* toxin

The general histological changes produced by *B. welchii* toxin are not very characteristic Kettle has found fine fatty degeneration in the liver and heart muscle, and I have found such changes in cases of acute obstruction and peritonitis These appearances are in no way diagnostic of *B welchii* toxæmia, but the fatty degeneration of the cardiac muscle has a clinical importance which will be referred to later

THERAPEUTIC TEST.

In acute obstruction the only obvious source of toxin is the contents of the obstructed intestine In peritonitis, on the other hand, the infection in the peritoneal cavity may well give rise to considerable toxæmia, though it is only in those cases which develop "paralytic ileus" that the mortality is high and the characteristic toxæmia develops. It has, however, been suggested, as long ago as 1897 by Veillon and Zuber,[3] that in acute appendicitis it was *B welchii* which was responsible for the infection of the appendix, the peritonitis, and the consequent toxæmia. This depended upon the finding of *B welchii* in a large proportion of acutely inflamed appendices This observation has been confirmed and emphasised more recently by Weinberg,[4] and anti-gas-gangrene serum has been used in France for some years in severe cases of appendix peritonitis The results were summarised by D G Michel[5] in 1923, and a great improvement in mortality has been claimed On the other hand, in this country many observers agree that *B welchii* is only found in the immediate vicinity of a perforated appendix, and its presence results from contamination by bowel contents and is not usually the cause of either appendicitis or peritonitis Moreover, the characteristic toxæmia will develop when there is paralytic ileus, whatever the cause of the peritonitis, whether streptococcal, pneumococcal, or resulting from any other organism, when *B welchii* is not present in the peritoneal infection Obviously the presence of a few *B welchii* in the peritoneal infection cannot account for the whole toxæmia, though it may contribute a quota when present It is the intestinal contents which must be the greatest and most constant source of toxin At the same time, the successful use of anti-gas-gangrene serum containing *B welchii* antitoxin by the French surgeons corroborates the hypothesis put forward in this investigation, that the intestinal toxæmia resulting from stagnation of the small intestine contents is due to *B welchii*

I have at St Thomas's Hospital been trying the effects of *B welchii* antitoxin in cases of acute obstruction and of peritonitis with paralytic ileus for the last two and a half years With cases of peritonitis resulting from gastric or duodenal perforation, pneumococcal infection, or so-called primary streptococcal infections, the numbers were very small, and it is not possible to make any useful statistical comparison of the results of the use of antitoxin

For statistical comparison, cases of peritonitis resulting from acute appendicitis were selected, because · (1) a reasonably large number is available annually, (2) the mortality of the disease is very constant, (3) it is usually cases which develop paralytic ileus which are fatal, and the progress of the disease can be easily followed

Under modern conditions, thanks to the work of the pioneers in early operative treatment of cases of acute appendicitis, the majority of cases recover without ever developing serious intestinal paralysis, and in consequence no severe anaerobic toxæmia It was therefore decided only to administer *B welchii* antitoxin to those cases in which one could say the chances of survival were 50 per cent or worse This included. (1) moribund cases of severe "general peritonitis"; (2) streptococcal peritonitis, unlocalised, in children under 12 years old, (3) cases which, after appendicectomy, continued to show signs of advance of the disease by rising pulse-rate, abdominal distension, and toxæmia

To increase the numbers, Mr P H Mitchiner (assistant surgeon), Mr A C Halliwell (resident assistant surgeon), and Mr C V Patrick (surgical registrar) consented to administer antitoxin to suitable cases operated upon by themselves The series consisted of 256 consecutive and unselected cases Eighteen of the most severe cases, including ten children under 12 years old, were treated with *B welchii* antitoxin There were three deaths in the series One death was due to cardiac failure in a woman of 68, 31 days after operation, when the abdominal condition was completely recovered One death was thought to be due to pulmonary thrombosis or embolism. No post-mortem was obtained One must be regarded as a failure, the patient dying with paralytic ileus in spite of the administration of *B. welchii* antitoxin (Table II)

TABLE II

Surgeon	Period	Total	Deaths
A C H . ..	12 months	91	2
B W W	23 months	82	0
C V P	11 months	34	1
P H M . .	11 months	21	0
Not operated on in acute stage	..	28	0
Total		256	3

Test series mortality	1 17 per cent (256 cases)
Normal mortality, 1925	6 3 per cent (111 cases)

This showed a considerable reduction of mortality With the exception of the use of antitoxic serum, these cases were treated on the usual lines in vogue at St Thomas's Hospital Cases seen in the first 48 hours of the disease were operated upon and appendicectomy performed Except in young children, cases seen after more than 48 hours from the onset of the attack were not operated upon unless there were signs of spreading peritonitis or of an abscess which required drainage In young children, on account of the usual failure to localise the infection, appendicectomy was always carried out as soon as possible Drainage, except of the abdominal wall, was not employed unless there was a definite abscess cavity, or doubt about the suture line, or if the presence of concretions in the abdomen was suspected

In the therapeutic test of *B welchii* antitoxin in cases of acute obstruction classification for comparative purposes is more difficult

It is very difficult to exclude errors due to individual difference of opinion as to what constitutes acute obstruction For comparison I have taken as the control series figures from a paper published by Mr. C M Page[6] giving the mortality at St Thomas's Hospital for the years 1919 to 1923 In this series, and in the series used for the therapeutic test of *B welchii* antitoxin, the classification was done by Mr C V Patrick, surgical registrar to the hospital Cases of obstruction due to malignant disease, though arising primarily in the large bowel, are included when there were acute symptoms, for the reason suggested before, that the acute symptoms and toxæmia are an indication that stagnation had extended back into the small intestine Idiopathic intussusception in infants is excluded, because manifestations of acute obstruction do not usually develop Mesenteric thrombosis is excluded, because it cannot be relieved surgically

The selection of cases for the administration of antitoxin is also difficult, because it is impossible to predict how any individual case will behave On two occasions a case which appeared perfectly fit before operation took a sudden turn for the bad after relief of the obstruction and died before antitoxin could be administered. Excluding these two cases, the test series consists of 54 consecutive cases, as shown in Table III

TABLE III

Cause of obstruction	Control series		Test series	
	B welchii antitoxin			
	Not used		Used	
	Total	Deaths	Total	Deaths
Malignant obstruction with acute symptoms	28	11	10	1
Adhesions and bands	24	4	10	1
Internal strangulation	23	9	2	1
Intussusception with tumour	3	2	2	0
Volvulus—				
Small intestine	3	2	1	1
Large intestine	1	1	2	0
Inguinal hernia	44	6	11	0
Femoral „	66	11	13	1
Umbilical „	22	7	3	0
Totals	214	53	54	5
Mortality	24 8%		9 3%	

Of these 54 cases, 19 of the most severe were treated with *B welchii* antitoxin In other respects all cases were treated on the usual surgical lines Of the five deaths, one was due to streptococcal septicæmia from a prick, nothing to do with his obstruction, one was due to post-operative gangrene of gut; three were extreme cases and failed to react

In cases of acute obstruction of the type discussed, the mortality is normally so high, between 20 and 30 per cent, that the use of antitoxic serum would always be justifiable Further, it is not uncommon to see cases which, after most successful operative relief, suddenly collapse unexpectedly This may be due to the sudden flooding of the circulation with a lethal dose of toxin by the very act of relief of the strangulated intestine This might occur through the restoration of the circulation to the damaged area permitting very rapid absorption of toxin, or possibly by rapid absorption of toxin by the normal mucous membrane distal to the obstruction after its relief The only way to control this danger would be prophylactic administration of antitoxin intravenously before operation, if necessary on the table This was not done in the series I have reported, but I have come to the conclusion that, in cases of acute obstruction, prophylactic administration of the *B welchii* antitoxin should always be employed when there are signs of involvement of the small intestine

IMPRESSIONS AS REGARDS THERAPEUTIC VALUE OF *B. welchii* ANTITOXIN IN OBSTRUCTION AND IN PERITONITIS

In cases of appendix peritonitis which showed the characteristic toxæmia associated with "ileus," the effect of *B welchii* antitoxin was often very striking. Restlessness was greatly diminished or abolished, and the look of acute consciousness disappeared, so that patients slept easily; cyanosis, when present, disappeared, and in one case a definite icteric tinge faded rapidly The pulse-rate usually began to fall after the administration of serum, and the quality of the pulse improved Abdominal distension often disappeared within a few hours of the administration of antitoxin and the patient, after complaining of "wind," began to evacuate the bowels spontaneously Even in severe cases the bowels usually began to act spontaneously, in spite of previous failure of enemata and pituitary though distension might not completely subside until convalescence was well established

In cases of acute obstruction similar effects were observed, but improvement usually follows so rapidly on successful operative relief that it is only by regarding the series as a whole that the effect of the antitoxin can be assessed

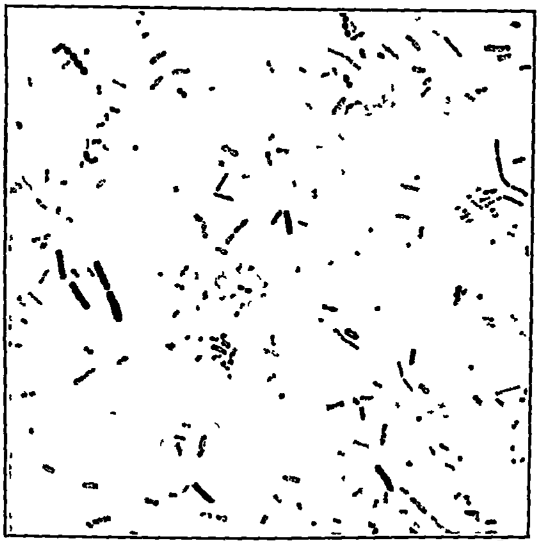
As regards the actual mortality-rates, each series appears to show a very definite improvement The series, however, are not sufficiently large for very positive deductions In diseases of this severity there must inevitably be a certain number of deaths, however perfect the treatment employed, and I think the figures obtained are surprisingly, and perhaps deceptively, good

I have not made any control series with the use of normal horse serum, on the assumption that this has been adequately tested in the *B coli communis* serum, which is seldom used now

DOSAGE AND INDICATIONS FOR TREATMENT

It is not suggested that the use of *B welchii* antitoxin is in any way alternative to the recognised surgical treatment of intestinal obstruction and of peritonitis It is put forward as a means of combating toxæmia consequent upon stagnation of the contents of the small intestine, which cannot otherwise be dealt with successfully In cases of peritonitis, intestinal paralysis and consequent stagnation as a rule develop gradually, and it is not difficult to select those cases in which the administration of antitoxin is justifiable

FIG 1



Standard film of vomit from a case of peritonitis

In view of these considerations, it is suggested that *B welchii* antitoxin should be given to all cases of peritonitis which shows signs of intestinal paralysis and toxæmia, as manifested by severe or progressive abdominal distension, increasing pulse-rate, restlessness, repeated vomiting, particularly if brown or offensive, especially if these signs continue after surgical treatment has been carried out Fatty degeneration of the cardiac muscle has been shown to occur, and it is essential that this should not progress too far to be recoverable

The effect of antitoxic serum is to neutralise toxin after its absorption from the intestine It is important, therefore, to realise, particularly in paralytic obstruction due to peritonitis, when the peritonitis which is the cause of the paralysis is still operative, that a clinical improvement is not an indication for stopping the administration of serum An adequate supply of antitoxin must be continued until the small bowel is emptying itself regularly and effectively By this means a patient may be given time to overcome the peritoneal suppuration, and the peritoneum has extraordinary powers of recovery.

In the therapeutic use of antisera it is essential that large doses should be employed The disadvantages such as sensitisation are not for practical purposes increased by the size of the dose, and young children require as much as adults

Many people still appear to regard the use of horse serum in human patients as a very dangerous procedure This it certainly is not An enormous number of patients every year are now given horse serum, both in this country and abroad for other diseases, such as diphtheria, tetanus and, now, scarlet fever, and fatalities from the serum must be so rare as to be negligible The dangers of administering serum cannot be compared with the dangers of a condition like acute obstruction or peritonitis with ileus Anaphylaxis is a phenomenon found in guinea pigs and mice and is excessively rare in human beings Further, as an extra precaution, an intradermic test can always be made and if necessary desensitisation can be quite easily and rapidly carried out Serum rashes occurred in a few of the patients of this series, but was never the cause of any anxiety.

The serum used was anti-gas-gangrene serum, prepared by Burroughs, Wellcome and Co, Series G155, for therapeutic use I found no indication for the inclusion of vibrion septique antitoxin, but this was the only reliable serum available containing *B welchii* antitoxin It is hoped that a pure *B welchii* antitoxin of higher titre will shortly be available The initial dose of serum should be at east 80 c cm intramuscularly In extreme cases a further 40 c cm should be given intravenously on the table After the initial dose 40-80 c cm should be given intramuscularly daily until the bowels are evacuating spontaneously and effectively The most difficult cases are those in which matting of the intestine occurs, producing obstruction which may be organic The use of antitoxin must not be allowed to prejudice the question of operative relief of obstruction due to matting of the intestines, as a result of peritonitis In cases of acute obstruction, where there is reason to suspect small bowel involvement, for the reasons already discussed, it is suggested that antitoxin should always be given prophylactically An initial dose of 40 c cm should be given intravenously before operation, with a further 40 c cm intramuscularly After operation further doses of 40-80 c cm should be given daily until the bowels are acting regularly.

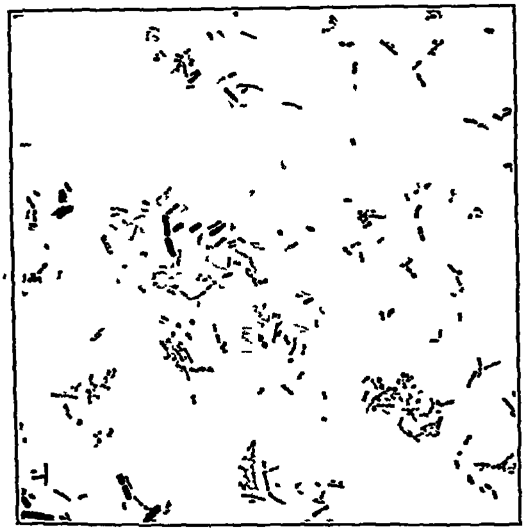
I have in this series sometimes used smaller doses, but the series was experimental, and for general purposes I am convinced that the best results can only be obtained by the use of larger amounts

DISCUSSION

This investigation was begun on the hypothesis that the toxæmia in cases of acute intestinal obstruction, whether organic or paralytic, was due in part at least to the absorption of *B welchii* toxin from the stagnant contents of the small intestine It is not asserted that this is the only toxin present, but it was the only toxin of which evidence was found by the most delicate tests available If it is true, the hypothesis offers a simple solution for many unexplained problems

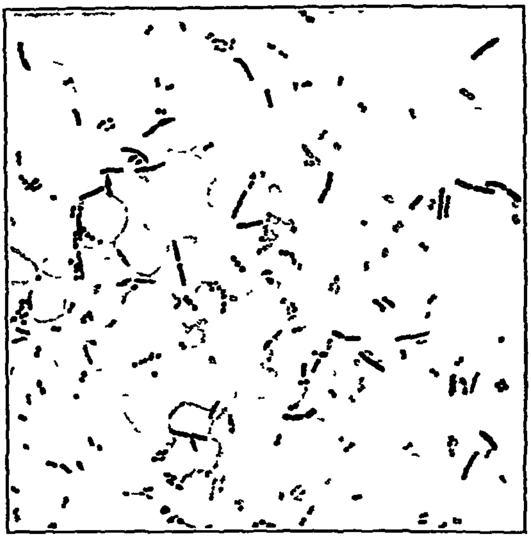
One of the most difficult and dangerous complications of acute intestinal obstruction or of peritonitis is paralysis of the intestine Apart from the suggestions arising from this investigation, the treatment of "ileus" has always been unsatisfactory Many procedures have been advocated, such as doses of pituitary or eserine, jejunostomy, ileostomy, and ileocolostomy, but all require for their success that the bowel should still be able to contract If the intestine is really paralysed, pituitary and eserine fail to secure evacuation, while they put a great strain on the heart, which is already damaged by the toxæmia Jejunostomy, ileostomy, and ileocolostomy have all the disadvantages of operative procedures carried out on patients who are already gravely ill and, if the intestine is really paralysed, will only secure evacuation of the loop into which an opening has been made The amount of material obtained by drainage is often disappointing Of the six cases in which ileostomy or jejunostomy was performed for obstruction or peritonitis, I have only three times been able to obtain sufficient material for filtration In these cases *B welchii* antitoxin was being administered in large amounts

FIG 2



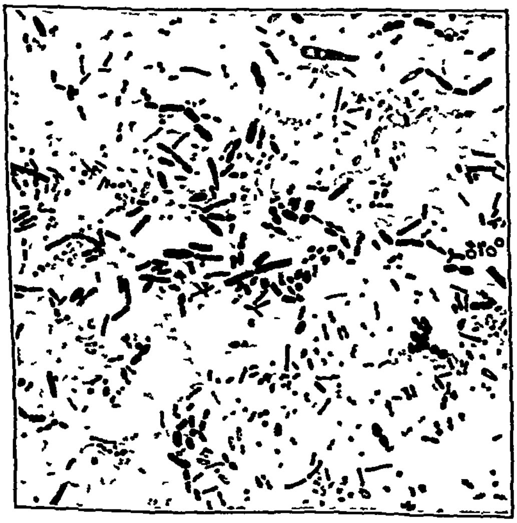
Standard film of vomit from a case of obstruction

FIG. 3.



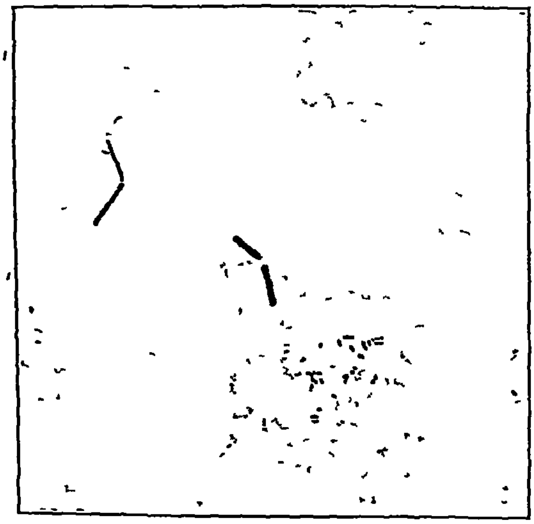
Standard film of small intestine contents from a case of peritonitis

FIG 4



Standard film of small intestine contents from a case of obstruction

FIG 5



Standard film of contents of normal terminal ileum A selected field showing organisms resembling *B welchii*

Now the toxin of *B welchii* has a special affinity for muscular tissue and it may well be that this paralysis of the intestine is in part due to an absorption from the intestinal contents of *B welchii* toxin, to which the muscle wall is exposed in its greatest concentration Thus the administration of antitoxin besides combating the general toxæmia, may contribute towards the recovery of the intestinal muscle so that the toxic intestinal contents can be evacuated and absorption of toxin be brought to an end It was observed repeatedly, during the clinical trial that distension disappeared and the bowels began to act freely after the administration of serum As this coincided with clinical improvement, it cannot be definitely attributed to the direct action of the antitoxin on the intestinal muscle

The very high mortality of obstruction of the small intestine by bands and adhesions coincides with ideal conditions for the development of *B welchii* toxin in the contents of the small intestine from the very onset of the disease The complete absence of toxæmia in patients suffering from absolute constipation, even for weeks, or of chronic obstruction of the large intestine, coincides with the unsuitable conditions in the large intestine for the development of *B welchii* toxin Again, in pyloric obstruction the unsuitable acid medium explains the entire absence of toxæmia

Again, the difference between patients suffering from a peritoneal infection, as contrasted with a pleural infection, even of the same organism, has always been the subject of speculation This difference may on this hypothesis be explained on the assumption that in peritoneal infections the clinical picture will result from the absorption of *B. welchii* toxin from the stagnant contents of paralysed small intestine The gravity of the toxæmia will be in proportion to the extent of small intestine affected, and will be much greater in diffuse infections than in cases where there is a localised abscess This is in complete accord with clinical experience.

Conclusions

To recapitulate the evidence on which the hypothesis rests 1 There is clinical resemblance of the toxæmia in acute obstruction and peritonitis with ileus and the toxæmia of gas-gangrene 2. There is evidence of immense proliferation of *B welchii* in the contents of the small intestine of patients with acute obstruction and peritonitis 3 There is evidence of the presence of the actual exotoxin of *B welchii* in the contents of the small intestine of cases of acute obstruction and peritonitis, and in the intestines of dogs in which these conditions had been produced experimentally 4 There is evidence compatible with the absorption of *B welchii* toxin, from the clinical aspect of cases, from the occurrence of intravascular hæmolysis, and from microscopical changes in the heart and liver of fatal cases 5. The hypothesis is corroborated by the results of a therapeutic test of the use of *B welchii* antitoxin in cases of acute obstruction and of peritonitis

In conclusion, I believe that these experiments are the first to indicate the presence of a true bacterial toxin of intestinal origin, its nature, and the conditions of its development. By good luck, there is also a means to hand by which it can be combated The hypothesis offers a simple explanation for many problems Therapeutically, if subsequent results are as encouraging, it is important, because of the large number and high mortality of cases in which acute obstruction may occur It has not been possible to produce absolute proof of the hypothesis as a whole The nature of the problem and technical difficulties make absolute proof impossible, even with very much greater numbers of observations that I have been able to make, greater reliance is therefore placed on the fact that evidence has been found in support of the probable truth of the original assumption by many lines of approach

Full details of the experiments are recorded in a paper contributed to the *British Journal of Surgery*, October, 1926 The work was begun in collaboration with Dr. S C Dyke, now pathologist to the Wolverhampton Hospital It could never have been carried out without the generous help of Dr R A O'Brien and Miss Muriel Robertson

The investigation was carried out at the Clinical Surgical Unit, St Thomas's Hospital, where Sir Cuthbert Wallace and Mr B C Maybury have helped throughout, and Prof L S Dudgeon, during the later stages, with advice and suggestions

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Bakers' Dermatitis and Compensation—At Southport County Court on April 7th a baker claimed compensation under the Workmen's Compensation Act from his former employers for bakers' itch contracted in the course of his employment Although he had now recovered it was submitted that he was a derelict on account of the state of the labour market, if he resumed work as a baker the disease was likely to recur The respondents contended that although the man was entitled to compensation, it was strictly limited Judge Thomas said he thought the applicant should return to work as a baker and granted compensation at the rate of £1 3*s* a week for 13 weeks He also made a suspensory order allowing him to claim again if necessary.

A FILTRABLE ENDOTHELIOMA OF THE FOWL.

By A M. BEGG, M.B, Ch.B.N.Z.

(From the Laboratories of the Imperial Cancer Research Fund)

The new growth which forms the subject of the present communication was discovered on post mortem examination of a White Leghorn hen which died on Nov 2nd, 1925 A large globular tumour of the ovarian region was regarded as the primary growth, and the whole peritoneal cavity and the solid and hollow viscera were studded with nodules of growth The metastases were similar to the primary growth in naked-eye appearance, being soft white healthy masses, the larger of which, especially in the liver, generally had a hæmorrhagic area in the centre Microscopically the nodules presented an indefinite alveolar arrangement of large cells irregular in shape The nuclei were large and vesicular, most of the chromatin being collected in a large single nucleolus The protoplasm showed a central finely granular area around the centrosomes and a peripheral coarsely granular zone Necrotic areas of varying extent were frequent and around them the cells had coalesced to multinucleate giant cells It was only after an extended study of the propagated tumours that the conclusion was reached that the parenchyma of the neoplasm was derived from endothelium, and the provisional descriptive label of *endothelioma* has been adopted The histological findings are reserved for a future communication

1 *Propagation by Cellular Grafts*

Seven young chicks were inoculated with grafts of 0 02–0 03 gr in the right and left pectoral muscles On the right the grafts were taken from the large (primary) growth, on the left from a liver metastasis The result of this primary transplantation is shown in the chart (Fig. 1)

Only one of the grafts failed to grow, that on the right side of chick No 6, killed 49 days after inoculation Transplantation of grafts has now been carried on for 20 generations, at an average interval of 27 days, fluctuating between 10–12 days and 55 days Two periods of depression, with slow growth and occasional absorption of the tumours, have been passed through, and have again given place to a phase of rapid growth

In the majority of the birds inoculated metastases have been found, most commonly in the liver and spleen The lungs have only occasionally presented macroscopic secondaries The kidneys, subcutaneous tissues, abdominal wall, and lymph nodes are occasionally involved, and widespread dissemination has frequently been observed in animals successfully inoculated with cell-free extracts An interesting instance of metastasis formation occurred in a bird of the third transplantation It had been lame for some days and was killed 55 days after inoculation The inoculation tumours in the breast-muscles were small, but on opening the abdomen extensive metastases were found in the liver and lungs A nodule 1 5 cm in diameter occupied the lower pole of the left kidney and the nerves of the left leg passed through, and were pressed upon by the growth, thus accounting for the lameness observed during life As in experiments with the Rous fowl sarcoma it is not unusual to find the association of extensive metastases with a small inoculation tumour—as in the above example, or, conversely, a large tumour at the site of transplantation and small or no metastases

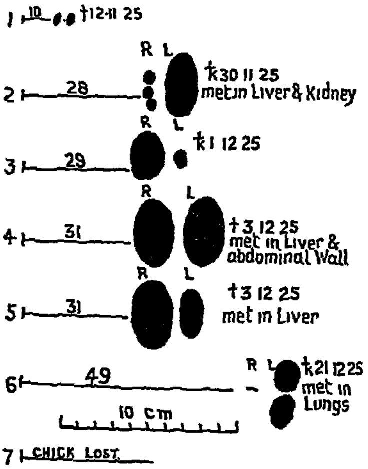
Although the original tumour occurred in a White Leghorn hen, no racial restriction has been observed in transplantation, all races of domestic fowls being equally susceptible In this respect the present growth agrees with Rous's osteo-chondro-sarcoma

No 7, which exhibited the same catholicity (Tytler, 1913 [1])

2 *Propagation with Dried Material*

A bird with a large tumour, resulting from an inoculation of filtered incubated tumour, was killed, and the tumour removed aseptically It was minced finely and spread in a thin layer in a Petri dish, which was placed in a desiccator with phosphorus pentoxide The desiccator was evacuated and placed in the ice-safe Three days later the dried scales were removed and ground in a mortar with a small amount of sterile diatomaceous earth Normal salt solution was added and mixed to the consistence of a thick paste A chick received 0 5 c cm of this paste in the pectoral muscle of the right side (28/5/26) A large tumour (5 × 4 cm) resulted and the bird was killed 24 days later Multiple miliary metastases were found in the liver and a large nodule in the spleen A graft from the pectoral tumour was inoculated into a young bird which had to be killed 14 days later, the tumour having reached a size of 4 × 3 cm. Metastases were found only in the right lung

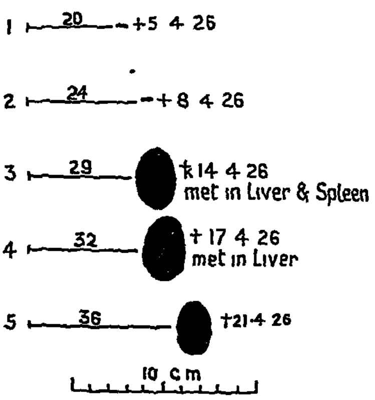
FIG 1



1 10 †12-11 25
R L
2 28 †k30 11 25 met in Liver & Kidney
R L
3 29 †k1 12 25
R L
4 31 †3 12 25 met in Liver & abdominal Wall
R L
5 31 †3 12 25 met in Liver
R L
6 49 †k21 12 25 met in Lungs
10 cm
7 CHICK LOST

Primary transplantation (cellular grafts) of MH, Expt MH2/0–1A Seven chicks inoculated 0 02–0 03 g grafts, r and l pectoral muscles [r from primary, l from liver] 2/11/1925

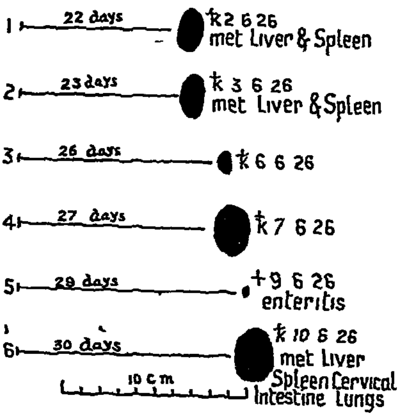
FIG 2.



1 20 †5 4 26
2 24 †8 4 26
3 29 †k14 4 26 met in Liver & Spleen
4 32 †17 4 26 met in Liver
5 36 †21-4 26
10 cm

Transmission of MH$_2$ (fowl endothelioma) by filtered broth “ culture,” i e , without living tumour cells Filtrate Expt No 1, 15/3/1926 , 5 Rhode Island chicks inoculated in right pectoral muscles 0 5 c cm Chamberland L 1 filtrate of a 22 hour culture to which emulsion of chick embryo had been added

FIG 3



1 22 days †k2 6 26 met Liver & Spleen
2 23 days †k 3 6 26 met Liver & Spleen
3 26 days †k6 6 26
4 27 days †k7 6 26
5 29 days †9 6 26 enteritis
6 30 days †k 10 6 26 met Liver Spleen Cervical Intestine Lungs
10 cm

Another experiment similar to that in Fig 2 Chick No 6 was a Rhode Island and had very widespread metastases Filtrate Expt No 2, 11/5/1926 , 6 chicks inoculated in right pectoral muscle with 0 5 c cm Chamberland L 1 filtrate of a 23-hour culture, to which emulsion of chick embryo had been added

3 *Propagation by Filtered Material*

(*a*) *Direct filtrate* —A fowl with a large tumour resulting from the inoculation of filtered incubated material 42 days previously was killed on 22/6/26 The tumour was removed aseptically, and 2 g were taken and ground with sand To this ground-up material 80 c cm of Locke solution was added The fluid was clarified by filtration through sand and paper pulp, and the resulting clear fluid passed through a Chamberland L 1 filter candle The filtrate was mixed with the minced tissues of an 11-day chick embryo and the resulting emulsion inoculated into three chicks in doses of 0 5 c cm Two died early The third chick was killed 24 days later. A tumour, 5 × 2 5 cm , was found at the site of inoculation Metastases were present in the liver, spleen, lungs, intestines, ureter, and cervical glands

A similar experiment (30/6/26) in which two chicks were inoculated with 0 5 c cm of filtrate and embryo emulsion gave a similar result One chick was negative, the other died 25 days after inoculation with a large tumour (5 × 2 5 cm) and metastases in the spleen and cervical glands

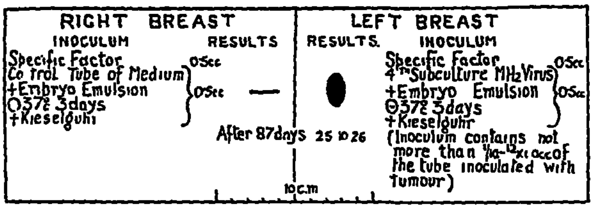
(*b*) *Filtration of broth “ cultures ”*—The polymorphism of the cells in the primary tumour and in several of the earlier propagated growths led us, erroneously, to regard this neoplasm as embryomatous (or at least mixed) in character, and in consequence an emulsion of embryonic cells was added to the inoculum in most of the experiments made with filtrates This was done in order to give opportunity for infection of a variety of tissues Later experiments and more extended histological study have shown this addition to be unnecessary

Fragments of tumours, removed aseptically, were incubated anaerobically in two tubes of rabbit serum KCl broth at 35° C These incubations of tumour in broth or serum broth are, for convenience, referred to as “ cultures ” Twenty-two hours later the supernatant fluid was carefully pipetted off and filtered through a Chamberland L 1 candle The filtrates were added to an emulsion, finely minced of chick embryo and five Rhode Island chicks each received 0 5 c cm into the muscles of the right pectoral region The result of the experiment is shown in Fig 2 Three out of the five birds were successfully infected Two repetitions of this experiment have been carried out The result of the first of these (Filtrate Expt No 2) is shown in Fig 3 (It is of interest to note that chick No 6 of this experiment, killed 30 days after inoculation, was a Rhode Island bird, the primary tumour having occurred in a White Leghorn This neoplasm does not show the same strict racial predilection which is so well seen in the case of Rous's No 1 sarcoma but, like Rous's osteo-chondro-sarcoma No 7, it grows equally well in all the races of domestic fowl which have been tested) In the third experiment of this series (26/5/26) three chicks only were inoculated One died six days after inoculation The embryonic tissues inoculated with the filtrate were still proliferating freely, so that it is impossible to decide whether infection had occurred The second was killed 19 days after inoculation There was a large primary growth, metastases in the liver, and enlarged cervical glands The third died 118 days after inoculation with a large pectoral tumour, and metastases in liver, spleen, œsophagus, and pancreas

In each of these three experiments the tumour material used arose from a graft of living cells It was of interest to determine whether the tumours so produced could themselves give an active filtrate after incubation The tumour from bird No 1 of Filtrate Expt No 2 (Fig 3) was removed aseptically, and fragments placed in three tubes of broth The tubes were incubated anaerobically as before Three White Leghorn chicks were inoculated with the filtered broth from these tubes with added embryo emulsion All three were positive, dying 16, 17, and 26 days after inoculation The experiment was repeated with the tumour from bird No 6 of the same experiment (Fig 3), except that the tumour was incubated in serum broth Two White Leghorn chicks were inoculated as before Both developed tumours and died 17 and 22 days respectively after inoculation

(c) *Propagation with filtered fluid alone (no embryonic cells added)*—Three separate attempts were made to infect developing chick embryos with filtered broth "culture," but all were unsuccessful The attempt was then made to produce the tumour in young chicks with filtered broth cultures Three chicks were inoculated (26/5/26) with 0 5 c cm filtered broth culture to which a small quantity of kieselguhr was added One died after 3 days and another after 43 days and were negative The third was killed 26 days after inoculation, it had a large tumour in the pectoral muscles (5 × 2 5 cm) and numerous large metastases in the liver Smaller secondary growths were found in the spleen, pancreas, and adrenal

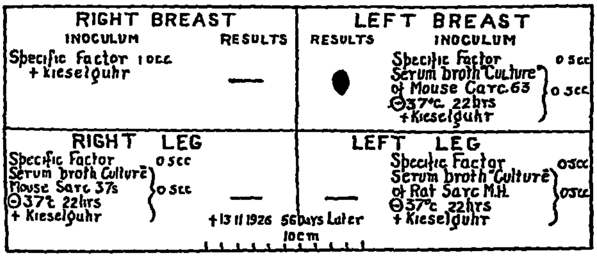
FIG 4.



Acriflavine inactivation Expt No 14 (vide table) 30/7/1926 Two chicks inoculated, one died five days later Showing inertness of filtrate from tumour incubated in acriflavine broth (1 3500) alone (r breast), and restoration of activity *by addition of fourth subculture of* MH_2 *virus (l breast)*

The experiment was repeated (3/6/26), 1 c cm of filtrate and kieselguhr being injected into three White Leghorn chicks All three were positive, dying 18, 21, and 26 days respectively after inoculation Metastases were present in the first two, but not in the bird dying at 26 days, although this bore the largest tumour (5 × 3 5 cm).

FIG 5



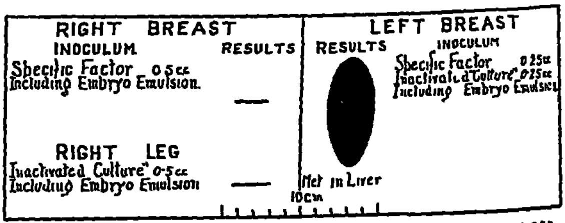
Acriflavine inactivation Expt No 15 (vide table) 18/9/1926 Attempted substitution of mammalian viruses Two chicks inoculated, one alive and negative at all sites, 6/4/1927 Successful reactivation of acriflavine broth filtrate of MH_2 (r breast) by "culture" of mouse carc (l breast) and failure with mouse and rat sarcoma "cultures" (r and l leg)

4 *Analysis of Transmission without Living Cells*

It is clear from the foregoing experiments that this propagable endothelioma belongs to the same group of tumours of the fowl as the three Rous sarcomata, 1,[2 3] 7,[1 4] and 18,[5] Fujinami's sarcoma,[6] and the tumours described by Teutschlander,[7] and others At the present time opinions are divided as to the true nature of these tumours of the fowl and in particular as to their relation to the malignant neoplasms of mammals A widely entertained opinion is that these fowl neoplasms are a peculiar group of virus infections of connective tissues, comparable with, and most closely related to, the epithelial overgrowth of fowl and pigeon-pox Their similarity to mammalian sarcomata is on this view superficial and deceptive Those who hold the contrary opinion that, viz , these neoplasms are true sarcomata, essentially the same ætiologically and biologically as the corresponding new growths of mammals, differ among themselves, some holding that a living infectious agent (virus) need not be postulated, pinning their faith to peculiarities of enzyme action (Carrel, Murphy [8]) and others While many workers have affirmed a belief in the microbic causation of cancer, the only coherent statement of the virus nature of these and all other malignant new growths is that of Gye [9] His view, based on a study of Rous sarcoma No 1, puts the tissue and racial specificity of these conditions in the forefront of his argument The virus he regards as relatively non-specific and common to most of the new growths, carcinomata as well as sarcomata, of birds and mammals The tissue and racial restrictions in transmission without living cells are believed by Gye to depend on the presence of a chemical substance derived from the host, the "specific factor" This of itself, without the virus, cannot give rise to a tumour, *without its concurrence the virus is innocuous*

The following experiments were undertaken to test the validity of Gye's conception on the related but distinctive material, presented *by this propagable* endothelioma The technique followed is that described by Gye (1925,[9] 1926[10]) and throughout I have had the advantage of Gye's personal advice and criticism The responsibility for the results and the conclusions drawn from them is mine. The experiments are being continued, and the present instalment should be regarded merely as a contribution to the *controversy which has followed* the publication of Gye's papers The work is technically exacting and time-consuming, and it is not surprising that differences of fact and interpretation still exist

FIG 6


RIGHT BREAST
INOCULUM
RESULTS
Specific Factor 0.5cc
Including Embryo Emulsion.
RIGHT LEG
Inactivated Culture" 0.5cc
Including Embryo Emulsion
LEFT BREAST
RESULTS
INOCULUM
Specific Factor 0.25cc
Inactivated Culture" 0.25cc
Including Embryo Emulsion
Met in Liver
10cm

HCN inactivation Exp No 1 HCN (vide table) 21/6/1926 Two chicks inoculated, one negative at all sites Result after 47 days of inoculation of single factors ("specific factor" r breast, "virus" r leg) and combined factors (l breast)

Gye's original method [9] of obtaining the "specific factor" free from virus, by the action of chloroform, has failed completely with the Mill Hill endothelioma The two alternative methods of rendering the virus inactive, leaving the "specific factor" in play, by the action of acriflavine and by hydrocyanic acid (Gye, 1926 [10]) have been more successful Heating active fluids to 55° C for 15 minutes gives a product which can restore the tumour-producing power of the fluid which has been rendered inert by acriflavine or hydrocyanic acid Heat-inactivated fluids of this kind are used in the following experiments to supply the virus with two exceptions—acriflavine Expts 14 and 15 (Figs 4 and 5) The end-points of these inactivations are not sharp, and it is only by the result of the animal experiment that it can be inferred that the active substances have been reduced below the threshold concentrations When the additional difficulties introduced by variations in tumour virulence and individual susceptibility of the chicks are borne in mind, it is not surprising that completely convincing demonstration of the dual nature of non-cellular transmission has not yet been achieved, but the results so far obtained are in harmony with this view

The accompanying table gives the results of all the experiments which have been undertaken to analyse the mechanism of non-cellular transmission of this tumour

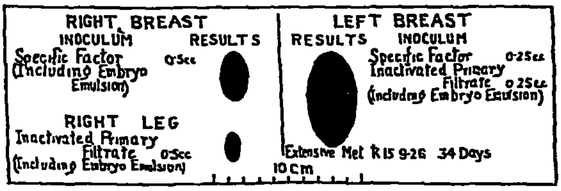
Summary of All Analysis Experiments

Experiment.		Chicks	Control (single factor)	Experiment (both factors)	
A	1	14	+ – – – (one died early)	+ + + + + + + + – –	
	2	9	+ – – – – –	– –	
	3	6	+ –	+ + + +	
	4	6	– – – –	– –	
		* ∿∿∿∿∿∿∿∿			
	5	3	+ + +	+ + +	
B	1–12	28	All negative	All negative	
	13	4	– – (both died early)	+ –	
	14	2	– –	+ –	Fig 4
	15	2	– –	+ –	Fig 5
	16	2	+ –	– –	
C	1	2	– –	+ –	Fig 6
	2	2	+ –	+ –	Fig 7
	3	2	• Scar	+ +	Fig 8 (1 and 2)
	4	2	+ +	+ +	

A = Chloroform. B = Acriflavine C = Hydrocyanic acid

In the first series in which inactivation of the virus by chloroform was employed the control inoculations with single inactivated fluids were made into separate birds from those receiving the mixtures containing both factors In the later experiments (with the one exception of Expt 13 acriflavine) separate sites of the same bird were used for control (single factor) and combined (both factors) inoculations The change over is indicated in the table by *∿∿∿∿. This alteration was rendered necessary by the errors introduced by individual variations in susceptibility of the birds The drawback to this form of the experiments is the possibility of diffusion of the virus to the rest of the body, so that tumours arise apparently at the point where "specific factor" alone had been introduced A disposition of the experiment which will evade these difficulties has not yet been devised As will be seen from the table, the results of the chloroform inactivation experiments are inconclusive, in some all the birds are negative, in others tumours have arisen from the injection of presumably single factors.

FIG 7


RIGHT BREAST
INOCULUM
RESULTS
Specific Factor (Including Embryo Emulsion) 0·5cc
RIGHT LEG
Inactivated Primary Filtrate 0·5cc (Including Embryo Emulsion)
LEFT BREAST
RESULTS
INOCULUM
Specific Factor 0·25cc
Inactivated Primary Filtrate 0·25cc (Including Embryo Emulsion)
Extensive Met † 15 9-26 34 Days
10 cm

HCN inactivation Expt. No 2 HCN (vide table) 12/8/1926 Two chicks inoculated, one negative at all sites Enhancement of result of injection of primary Berkefeld filtrate of MH, incubated with HCN 1 5000 30 minutes, by incompletely inactivated filtrate (55° C 15 minutes) Incomplete separation of factors

Acriflavine and Hydrocyanic Acid Inactivation

The details of the preparation of "virus" and "specific factor" relatively free from each other in the remaining experiments is as follows —

(*a*) Elimination of "specific factor" Preparation of inactivated "culture" (virus suspension) The supernatant fluid of an anaerobic "culture" of the tumour in broth (22 hours) is carefully removed and heated for 15 minutes at 55° C. to destroy the specific factor

(*b*) Destruction or diminution of virus by acriflavine, with preservation of "specific factor." To a tube of serum broth acriflavine is added in amount sufficient to give a concentration of acriflavine 1 : 3500. 0 5 g of minced tumour is introduced and the tube incubated anaerobically for 22 hours at 37° C The supernatant fluid is taken and spun for 15 minutes at a high speed, and the upper clear layer carefully pipetted off—"specific factor" (acriflavine)

(*c*) Destruction or diminution of virus by hydrocyanic acid 0 5 gr tumour emulsion is incubated anaerobically at 37° C for 3 days in a tube of serum broth The reaction of the supernatant fluid at the end of this time had risen to pH 6 0 To 4 9 c cm of the undisturbed supernatant fluid is added 0 1 c cm of 1 per cent hydrocyanic acid, giving a concentration of HCN 1 5000 This is incubated aerobically for 30 minutes at 36° C, and the hydrocyanic acid then pumped off under a Geryk pump—"specific factor" (HCN)

FIG. 8 A.

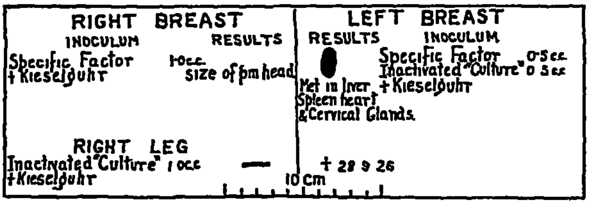
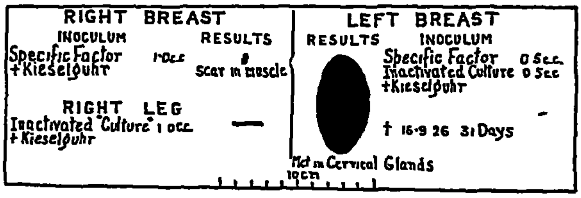

RIGHT BREAST
INOCULUM
RESULTS
Specific Factor + Kieselguhr 1·0cc
size of pin head
RIGHT LEG
Inactivated "Culture" 1 0cc + Kieselguhr
LEFT BREAST
RESULTS
INOCULUM
Specific Factor 0·5cc
Inactivated "Culture" 0 5cc
+ Kieselguhr
Met in liver, Spleen heart & Cervical Glands.
† 28 9 26
10 cm

FIG 8 B



HCN inactivation Expt No 3 HCN (vide table) 16/8/1926 Two chicks inoculated Reactivation of broth filtrate of MH, treated with HCN by heat inactivated "culture" (55° C. 15 minutes) No embryo emulsion added to inocula in this experiment

The details of the fluids injected at the various sites, and the end-results of the experiments are shown in Figs 4–8, and with the legends make further description unnecessary

Expt No 4 HCN (vide table) gave tumours at the sites of inoculation of "specific factor" alone, and of combined factors as in Expt No 2 HCN (Fig 7).

Summary

The biology of a tumour of the domestic fowl with the structure of an endothelioma is described It can be propagated by cellular grafts, by dried material, and by filtrates of tumour emulsion direct, or after incubation anaerobically, in broth culture media An attempt has been made to test the validity of Gye's conception of the dual nature of non-cellular transmission for this tumour, and the results are in harmony with his views

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THE EXPERIMENTAL PRODUCTION OF A NEW TYPE OF GOITRE UNRELATED IN ITS ORIGIN TO IODINE *

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THE goitres hitherto produced by me under experimental conditions in animals [1] (pigeons, rats, and goats) have been of three types · the hypertrophic, the hyperplastic, and the colloid The first may arise in animals living under unhygienic conditions of life in iodine-poor localities, it arises also in animals receiving massive doses of fæcal bacteria in admixture with their food, congenital goitre and cretinism being thereby produced in their offspring The second may arise in animals receiving an excess of fats or of fatty acids in an otherwise well-balanced diet [2] The third has not been produced in typical form as seen in man, but a condition simulating it in pathological features has resulted in animals from the excessive ingestion of lime in an otherwise well-balanced food [3] With the possible exception of those caused by the administration of cultures of fæcal bacteria the goitres produced in these ways are preventable, by increasing the intake of iodine proportionately to the unhygienic conditions of life of the animals, or to the excess of fats or of lime in their food The present paper deals with the experimental production of a variety of goitre which conforms to none of these types, which has distinctive ætiological and pathological features, and is unrelated in its origin to the iodine ingested Its histological features are those of an intense secretory hypertrophy approaching that seen in primary Graves's disease

In view of the comparatively wide prevalence of "simple goitre" amongst white-flour-eating peoples and of the prominence which has of late years been given to iodine deficiency as its sole cause, and to iodine prophylaxis as the only means of its prevention, it was thought desirable to ascertain whether diets into which white flour entered largely, and from which green vegetables and fruit were excluded, could give rise to, or favour the development of, "goitre" in animals receiving iodine in adequate amounts and living under conditions of the strictest hygiene

Details of the Experiments

Sixteen groups of young rats from non-goitrous stock, six animals in each group, were selected for this work, males and females being as far as possible equally distributed in each group and the age of the animals being approximately the same (30 to 60 days) Their initial weights ranged from 30 to 67 g Each animal was confined in a separate cage so constructed as to render hygienic conditions of life as perfect as possible The cages were provided with netted-wire bottoms of fine mesh through which the excreta fell into zinc trays below During feeding time clean trays were passed into slots above the netted-wire bottoms of the cages so as to prevent loss of food, at the same time attendants went from cage to cage removing any excreta passed The cages were washed with antiseptic lotion daily and were sterilised in boiling water at regular intervals in a specially constructed apparatus (These precautions are absolutely essential in all experimental work on goitre in order that the factor of dirt may be excluded, this factor being of itself prone to cause thyroid changes, sometimes amounting to actual goitre, especially if the iodine intake of the animals be low [1, 5, 6]) At night the animals were bedded in sterilised cotton waste Each was given a known quantity of its particular diet daily, the balance not eaten being weighed and the daily food consumption by each animal recorded Distilled water was provided for drinking and washing purposes Each animal was weighed weekly and the weights charted. Clinical notes of any symptoms shown by them were kept, and a complete post-mortem examination of each was made at the end of the experiment so as to ascertain the cause of death In animals dying before the end of the experiment post-mortem examination was made as soon as possible after death in order to limit the autolytic changes to which the thyroid gland is so liable In none of the experimental animals was post-mortem examination delayed for longer than 12 hours; in very few for so long The animals surviving to the end of the experiment were killed and their thyroids removed and fixed immediately The diagnosis of "goitre" was made on macroscopical characters and subsequently confirmed microscopically A number of non-goitrous thyroids were also examined for purposes of comparison with the goitrous, and in order to detect the earliest signs of the gland's departure from normal

The Experimental Diets

The materials used in the preparation of the experimental diets were American white flour, purified starch, olive oil, "meat residue" and "salt mixture" The "salt mixture" was made up as follows Calcium lactate, 39 g, calcium phosphate, 16 2 g, potassium phosphate, 28 62 g., iron citrate, 3 54 g, sodium chloride, 5 19 g, magnesium sulphate, 7 98 g; sodium phosphate, 10 41 g; and potassium iodide, 0 5 g (McCollum and Davies).[7] The "meat residue" was prepared by a method described elsewhere [8] The percentage composition of the diets is given in the table together with the number of cases of goitre resulting from the different diets

Table showing the Percentage Composition of the Experimental Diets and the Incidence of Goitre

Class of diet	Group No of diet	Animals in group	American white flour	Olive oil	Salt mixture	Meat residue	Starch	Cod-liver oil	Dried yeast	Animals goitrous
	*I	6	100							1
A	II	6	92	8						3
	III	6	95		5					2
	IV	6	87	8	5					3
	V	6	82	8	5	5				3
	VI	6	77	8	5	10				2
	VII	6	72	8	5	15				1
B	VIII	6	60	10	5	20				0
	IX	6	50	10	5	20	10			0
	X	6	40	10	5	20	20			0
C	XI	6	30	10	5	20	30			1
	XII	6	20	10	5	20	40			0
	XIII	6	10	10	5	20	50			3
	XIV	6		10	5	20	60			4
	XV	6		10	5	20	60			2
	*XVI	6		8	5	20	60	2	5	0

* I and XVI are control diets

Influence of the Experimental Diets in Causing Goitre

There were 25 cases of thyroid enlargement among the 96 animals a case-incidence of 26 per cent The various diets range themselves into three classes according to their influence in causing goitre —

(*a*) Those in which the white flour content is greater than 60 per cent and the protein content less than 20 per cent, fats and salts being adequate (II to VII)

(*b*) Those in which the protein content is constant at 20 per cent and the white flour content is between 40 and 60 per cent, fats and salts being adequate, and the balance of carbohydrate being made up of purified starch (VIII to X)

(*c*) Those in which the protein content is constant at 20 per cent, fats and salts being adequate, while the white flour content is reduced to below 30 per cent and the balance of carbohydrate made up of purified starch (XI to XV)

The control diets (I and XVI) are not included in these three classes

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Goitre occurred in the first and third classes to an almost equal extent (38 9 and 33 3 per cent respectively), but not at all in the second class; this does not mean that diets of this class cannot cause goitre, but that they did not cause appreciable enlargement of the gland in this experiment

There were eight diets (I, II, III, IV, XII, XIII, XIV, and XV) which failed to ensure even a moderate rate of growth These may be excluded as unlikely to be of a composition comparable to any diets used by white-flour-eating peoples They have however, served a useful purpose in the experiment by indicating that insufficiency of vitamins of the B class is a principal dietetic fault concerned in the production of this type of goitre. There are left seven diets (V, VI, VII, VIII, IX, X, and XI) into which white flour entered largely, these ensured a rate of growth which, though not perfect, was at least considerable The following facts in regard to their association with goitre are to be noted.—

1 Those containing 72 per cent or more of American white flour and 15 per cent or less of protein, the fats and salts sufficing for normal needs, caused noticeable goitres in 33 3 per cent of young rats, despite the adequate ingestion of iodine

2 Those containing 20 per cent of protein and between 40 and 60 per cent of American white flour, the fats and salts sufficing for normal needs, did not cause goitre.

3 One diet containing 20 per cent of protein and 30 per cent of American white flour—the balance of carbohydrate being made up of purified starch and the fats and salts sufficing for normal needs—caused goitre in one out of six animals fed upon it, despite the adequate ingestion of iodine

The conclusion is thus reached that diets having the composition of those in Groups 1 and 3 above will cause goitre in approximately 25 per cent of individuals consuming them, despite the adequate ingestion of iodine The amounts of potassium iodide ingested with these diets ranged between 0 4 and 2 6 mg. per rat daily

Among the 16 experimental diets there were two (Nos I and II) which caused goitre in 3 out of 12 animals; no iodine was added to them The goitre arising in consequence of their consumption did not appear to differ histologically from those caused by the other diets The further conclusion is therefore reached that the pathogenesis of this type of goitre was independent of the amount of iodine ingested with the food

Sex-incidence of the Goitre

Of the 96 animals used in this experiment 42 were males and 54 females There were 9 cases of goitre in males, 16 in females, a case-incidence of 21 4 per cent in males and 29 6 per cent in females Taking into account only the goitre-producing diets (V, VI, VII, and XI) which ensured fair growth in the young rats consuming them, there are 24 animals to be considered Of these 13 were males and 11 were females Goitre occurred in 1 male only, while 6 females were affected by it, a case-incidence of 7 7 per cent in males and 54 5 per cent in females Although the figures are small, yet this difference in sex-incidence appears to be sufficiently marked to justify the conclusion that females are much more likely to suffer from this type of goitre than males—a significant conclusion in view of the probable relationship of this type of thyroid change to Graves's disease and myxœdema (vide infra), and of the higher incidence of these conditions in the female sex [9]

Pathology of the Goitre

Macroscopically the goitres are of glistening, fleshy appearance, bright or darkish red in colour, they stand out prominently against the surrounding tissues They are of small size, being from 50 to 100 per cent larger than the normal organ The isthmus is usually prominent, thickened, and broadened. Commonly one lobe is more enlarged than the other, occasionally the enlargement is unilateral

Microscopically the earliest evidence of change is seen in glands which are not appreciably enlarged, but which appear bright coloured at post-mortem examination More or less circumscribed areas (Fig 1)—commonly in the isthmus, the posterior border, and the lower pole of one or other lobe—are seen to be depleted of colloid material or to be in process of depletion The affected area assumes a cellular structure composed of a more or less solid mass of epithelium This mass—the so-called intervesicular parenchyma—increases in bulk at the expense of the colloid containing follicles appearing gradually to invade them and to crowd them out, some of these follicles contain larger or smaller numbers of free cells Here and there the solid mass of epithelium is vesiculated by the collection among the cells of pools of new secretion (not colloid) [9] The cells subtending these pools present the typical features of secretory activity (Figs 1 and 2), rather deeply-staining nuclei located at their base, and faintly basophil and granular cytoplasm Passing from such non-goitrous glands to specimens of the actual goitres, one sees the more extensive crowding out of colloid-containing follicles until in some sections there may be but two or three and occasionally none at all (Figs 3 and 4) Such colloid-containing follicles as exist are of normal appearance, the colloid deeply eosinophil, the acinar cells flattened or more commonly cuboidal, nuclei centrally placed and evenly distributed, and cytoplasm homogeneous and faintly acidophil The whole or almost the whole organ is thus gradually depleted of its stored colloid material and the normal structure of the gland is replaced by tissue in a state of intense secretory activity (Fig 2) Nowhere in the gland is "vesicular budding"—so conspicuous a feature in the experimentally-produced hyperplastic goitre—to be seen The perifollicular reticulo-endothelial system, described by Williamson and Pearse,[10] stands out prominently owing to its affinity for hæmatoxylin; many of its cells are swollen, but the stains used did not permit of the definition of its cytoplasmic granules (Fig 3) Here and there this system is subtended by a number of round cells—sometimes forming considerable collections (Fig 3)—which appear to be lymphocytes In goitrous animals dying between the fortieth and the seventy-fifth day of the experiment these may be the only appearances seen, there being no appreciable increase in the fibrous stroma of the gland and the secretory epithelium showing no marked signs of exhaustion But in goitrous animals which survived to the end of experiment (165 days), and were then killed, this earlier and progressive stage is seen to have given place, in greater or lesser degree, to appearances indicative of a breaking down of the gland's compensatory mechanism In this retrogressive stage exhaustion of more or less epithelia occurs and there is a relative increase in the fibrous stroma of the gland (Fig 4) The process is one of intense *secretory activity* with a gradual depletion of the gland's store of thyroxin-containing colloid and with little or no attempt at completion of its cycle of activity and the replacement of colloid It is a condition which in its *early stages* might possibly be precipitated into one of Graves's disease by such additional excitants as fright, mental worry pregnancy, lactation, and attacks of acute infectious diseases, such as influenza and acute rheumatism In its *later stages*, however, exhaustion of a greater or lesser number of the gland's secretory elements takes place and these are replaced by non-secretory elements in amounts foreign to the normal organ Proportionate degrees of thyroid insufficiency will thus result with clinical manifestations of myxœdema commensurate with the degree of insufficiency

Dr Williamson and Dr. Pearse, to whom sections of *early* cases of this type of goitre were sent for opinion, consider the histopathological picture to be one of intense secretory hypertrophy almost approaching the complete heterotrophy of the *adenoid goitre* of primary Graves's disease,[11] a condition which, if prolonged will result in failure of the gland's compensatory mechanism and the production of a state resembling that to which they have applied the term *lymphadenoid goitre.*[11] That this sequence of events does actually take place is apparent from the series of photomicrographs (Figs 1 to 4) illustrating the histopathological picture from its earliest to its latest stages

Cause of the Goitre

The fundamental cause of this type of goitre is a dietetic one, its exciting cause is a different matter The influence of faulty food in causing it is made apparent by the complete freedom from it enjoyed by well-fed stock rats in this laboratory. The stock diet consists of whole wheat flour (*chapattis*), sprouted grain, milk, butter, and abundance of green leafy vegetables and raw tubers (potatoes and carrots), with fresh meat occasionally The dietetic cause of the goitre lies, therefore, in the differences in quality between the stock diet and the experimental diets In comparison with the former the latter contained an insufficiency of accessory food factors belonging to the vitamin B class,† they were also deficient in vitamin C, in vitamin A, in manganese, and in vegetable juices and roughage (cellulose and the indigestible parts of plants), while they were rich in vitamin-poor carbohydrate *Although it seems* probable from the results of the experiment (Table I) that the insufficient provision of vitamins of the B class was the principal dietetic cause of this type of goitre, yet I am reluctant to attribute it wholly to this cause For the present it is enough to say that it is prone to rise when green vegetable foods and fruit are excluded from a diet containing more than 60 per cent of white flour, less than 20 per cent. of protein, and fats and salts (including iodine) in adequate amounts

There is another aspect of the causation of this type of goitre. All animals in each group were fed alike There would seem at first sight to be no more reason, on dietetic grounds alone, why one or two animals in any one group should become goitrous than that the remainder should not It is true that among the non-goitrous remainder there were some whose thyroids presented changes in *part of the gland* similar to those found in the goitrous organs; but there were others whose thyroids were to all appearances normal Nothing, however, is more striking in the pathogenesis of deficiency diseases[4] than the variability of the effects of faulty food on different individuals and on different organs and tissues of the body In one the nerves, in another the heart, in a third the gastro-intestinal tract may be so injured as to dominate the clinical scene So it may be in the present instance, the faulty diets used in these experiments may have induced in some thyroids a graver state of physiological inefficiency than in others, and the changes in the goitrous glands may represent the attempt made by the physiological subnormal gland to attain to a state of compensation In this attempt it must inevitably fail since its malnutrition renders it inefficient as a machine

On the other hand, the faulty diet per se may not have been the essential cause of the disease, but have favoured the action on an ill-nourished and physiologically subnormal gland of some goitrigenous agent peculiar to the animals which developed goitre The diets with which the goitres were associated gave rise to a physiologically subnormal, and sometimes to a pathological, state of the gastro-intestinal tract, and it is possible that the exciting cause of the disease may have been of intestinal origin and of toxæmic nature I have previously[9] postulated the existence of such "toxæmic goitres" in constipated and imperfectly nourished girls The present paper suggests at once the cause of the intestinal stasis (insufficiency of vitamin B)[4] and of the "toxæmic goitre" which may accompany it *While the cure of* simple goitre which may so rapidly follow the removal of the stasis,[9] without change in the state of nutrition of the subject, lends support to the view that the thyroid enlargement is in such cases of toxæmic origin It may be, again, that faulty diets such as those used in these experiments give rise to different biochemical disturbances in different individuals with the production in some of abnormal metabolites which excite the thyroid unduly or deplete it of the hormone necessary for their combustion

There are thus three sites at which the essential cause of this type of goitre is to be sought The first, in the gland itself, where inefficiency of the thyroid machine may be brought about by its malnutrition with impediment to the normal revolution of its cycle of activity, the second, in the body fluids and tissues where imperfect metabolism may be assumed to result in the production of abnormal metabolites and to cause depletion of the thyroid hormone necessary for their combustion; and the third, in a physiologically subnormal or pathological alimentary tract whence bacterial agents or their toxins may find their way into the circulation and induce pathological changes in the thyroid gland But at all three sites the common factor is imperfect nutrition induced by the faulty food, the general statement I have already made as to the dietetic cause of this type of goitre will serve until we know more of the part played by the thyroid gland in the animal economy and of the biochemical phenomena associated with faulty nutrition

Commentary

In view of the confusion which exists in regard to the causation and prevention of the thyroid diseases included under the generic term "simple goitre" the results of these experiments are illuminating If, as seems likely, the type of goitre here described be found to occur sporadically amongst white-flour-eating peoples, then the view that all "simple goitres" are due to iodine deficiency and preventable by the prophylactic use of iodine must be abandoned The relation of iodine to each type of "simple goitre" must be definitely defined, this has been attempted for the classical type of endemic goitre—the chronic hypertrophic or parenchymatous type; it remains to be done for the diffuse colloid type of endemic goitre

The experimental evidence here provided makes it probable that in Western countries this new type of goitre will be encountered in its progressive stage in childhood and in young women of the working classes whose food contains much vitamin-poor carbohydrate, little suitable protein, and less green vegetables and fruit, and in its retrogressive stage in older subjects whose food has similar faults If this should prove to be so iodine will neither prevent nor cure the disease, but a well-balanced diet rich in vitamins will. These matters can, however, only be decided by clinical and epidemiological observation, and by "goitre surveys" which take into consideration the food habits of the people and are not limited to one section of the community—the children Outside the laboratory it will probably be found that the purity in type of this variety of goitre may commonly be obscured by the interaction, with the nutritional factors which give rise to it, of other goitrigenous influences, such as the ingestion of an excess of lime or of fats, and insanitary conditions of life both intrinsic and extrinsic to the individual Such influences as these may be expected to distort its characteristic histopathological picture and give variety to the characters of the goitres met with in different individuals or in different localities Further, it can hardly be doubted that the pathological features of the "endemic goitres" will be influenced by the food habits of residents in endemic zones, where white flour is the staple article of diet and milk and green vegetable foods are scarce endemic influences may be expected to give rise to a pathological picture in the thyroid gland which will differ in detail from that resulting in localities where whole wheat flour is used and milk and vegetable foods are abundant

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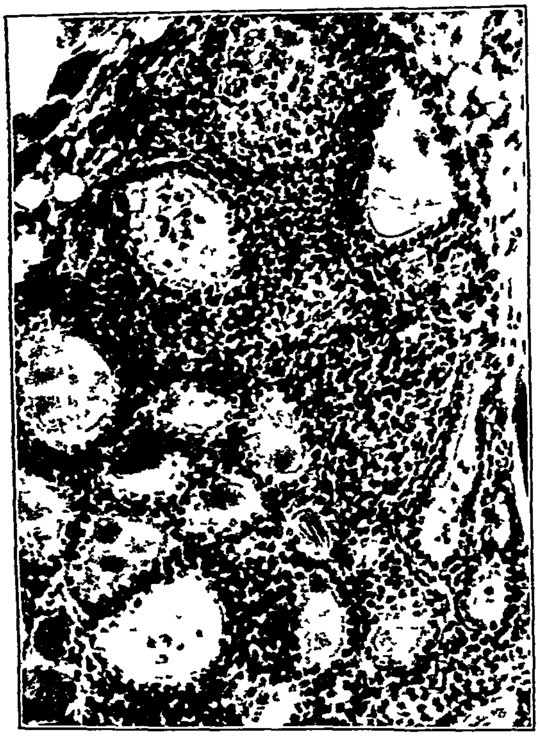
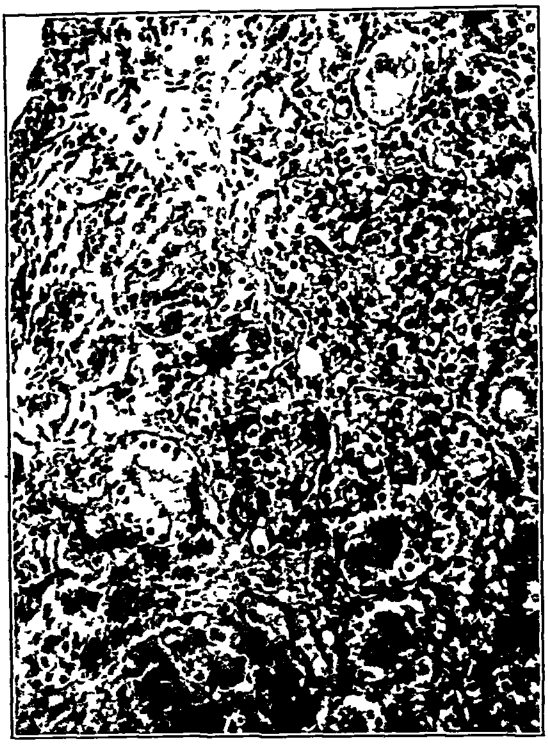
† Experiments now in progress appear to indicate that there are two fractions in vitamin B a growth promoting fraction and an antineuritic fraction, white flour is not devoid of the latter, but is very deficient in the former, polished rice is very deficient in the latter

FIG 1



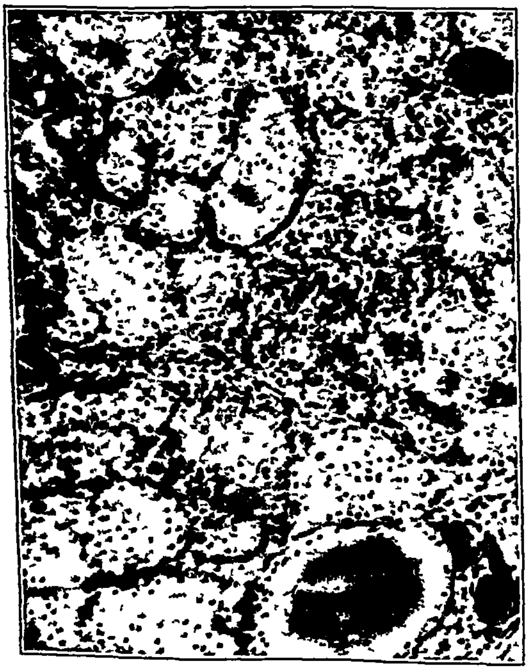
Non goitrous thyroid of rat fed on diet No VI (see table), animal killed on the 165th day of the experiment, shows the earliest stage of the process described in the text

FIG 2



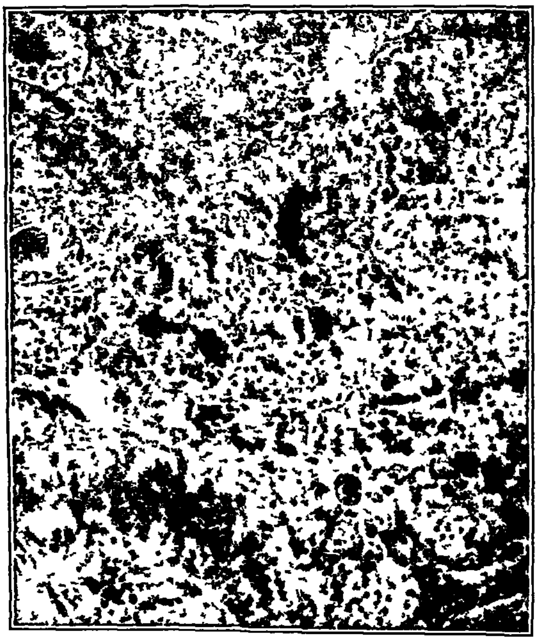
Goitrous thyroid of rat fed on diet No VI (see table), animal killed on the 165th day of the experiment, shows intense secretory hypertrophy with commencing invasion of the gland by fibrous tissue

FIG 3



Goitrous thyroid of rat fed on diet No XI (see table) animal died on the eighty third day of the experiment, some auto lytic changes are present, shows state of secretory hypertrophy and prominence of the perifollicular reticulo-endothelial system

FIG 4.



A late stage of the process showing exhaustion of epithelium and invasion of the gland by non secretory elements, animal died on the 127th day of the experiment

Summary

(1) A new type of goitre has been produced, under experimental conditions in young rats, which is unrelated in its origin to iodine deficiency

(2) It is to be distinguished ætiologically, pathologically, and epidemiologically from the chronic hypertrophic or adenoparenchymatous type of endemic goitre and from the diffuse colloid type of endemic goitre.

(3) The basal factor in its causation is a diet containing more than 60 per cent. of white flour or of vitamin-poor carbohydrate, 20 per cent or less of protein with fats and inorganic salts (including iodine) in adequate amounts, but no green vegetables nor fruit

(4) The goitre arising in these circumstances is characterised by intense secretory hypertrophy which ultimately leads to exhaustion of more or less of the epithelia and its replacement by non-secretory elements and fibrous tissue These changes may be present without any marked increase in size of the gland.

(5) It seems likely that this type of goitre will be found to occur sporadically amongst white-flour-eating peoples, that the subjects of its progressive stage will be prone to develop Graves's disease, following such influences as fright, mental worry, pregnancy, lactation, and attacks of acute infectious disease; and that the subjects of its retrogressive stage will exhibit greater or lesser degrees of myxœdema.

(6) If this type of goitre be found to prevail sporadically in white-flour-eating peoples the additional provision of iodine in the food will not prevent it, but a well-balanced, vitamin-rich diet will

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Royal West Sussex Hospital —This hospital has exceeded its income by £2640 this year At the annual governors' court on April 12th sanction was given to sell out investments, or to transfer from the trustees' account sufficient money to liquidate the deficit Not so very long ago the hospital increased its accommodation from 60 beds to 100 beds; it is considered that the change has been thoroughly justified by the use made of the beds From 978 in-patients and 717 operations in 1923 the figures in 1926 were 1280 and 1153 respectively The financial position, however, caused great anxiety A contributory scheme was launched six months ago, and since the annual meeting of the governors a total of nearly 9000 contributions has been received, covering some 20,000 people Compared with the progress of similar schemes in other parts of the country the governors consider that a very satisfactory start has been made, and by the end of the first 12 months it is hoped that the number of contributions will be up to 15,000 Good progress is being made in regard to the centenary scheme which was launched early in the year, the scheme is to raise a sufficient sum to provide additional accommodation, including better quarters for the nursing staff and the establishment of beds for maternity cases

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SOME REFLECTIONS ON THE TREATMENT OF FRACTURES OF THE LIMBS.

WITH SPECIAL REFERENCE TO THE INITIAL TREATMENT *

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The subject of fractures has now absorbed my attention for some years past It deals with a somewhat neglected branch of surgery, and I offer during this discourse some practical suggestions which I hope may interest you and at the same time attempt to bring nearer perfection the condition of a patient who may be suffering with a broken bone In bygone days fractures, amputations, lithotomy, and herniotomy were foremost in our surgical procedures Then, with Lord Lister's discovery of the bacterial origin of inflammation and the approach of aseptic technique, a new age began in surgery. Amputations were displaced from their former exalted position and new tracts of the body were conquered in the regions of the abdomen, the thorax, and the brain

The rapid advances made during the last 40 years have cast an illusion over the eyes of the younger generation of surgeons who have, perhaps, thought that all might be cured by the knife alone There has been so much discovered that was new, both to teacher and student, that the treatment of fractures was, for a generation or so, apparently allowed to fall into the background as a subject on which our grandfathers had said the last word

In most of our medical schools the treatment of fractures is only too often assigned to junior officers Nor is this all The demand for beds is so pressing that a house surgeon will gain no favour if fractures are admitted in numbers or retained for long Hence the immediate application of plaster and its attendant evils—stiff limbs, wasted muscles, and pressure sores In each medical school customary methods have during the years become stereotyped, until at the present time it is often possible to name the school in which a man has been trained by the splints and methods he employs for the treatment of any particular type of fracture

Modern Diagrams and Treatment of Fractures

The very commencement of the twentieth century however, marked an epoch in the history of fractures, for Prof Roentgen's discovery of X ray in 1895 and its application to the study we are now discussing wrought a wonderful change in our views and in our methods of treatment X rays enable the surgeon to see the actual condition of the fractured bone, and the radiograph is to the surgeon what the ophthalmoscope is to the ophthalmologist and the cystoscope to the urologist By its correct application he gains information as to the true state of affairs in the condition with which he is dealing, analogous, in diagnostic value, to the exploratory laparotomy of the abdominal surgeon Still more recently the experiences of the great war subjected the accepted modes of treatment and appliances to a supremely severe test, exposed their weaknesses, and forced us to evolve new methods as well as to improve the old

Without good X ray films it is impossible to be sure of obtaining the best results, because a great variety of pathological details may be learnt from a careful study of them

1 The presence of a fracture
2 The variety and position of the fragments
3 A coexisting dislocation of, or other injury to, a joint
4 The presence and situation of gas-gangrene and of air in the soft parts

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* An address delivered at St James's Hospital on Jan 26th, 1927

5 The presence of bipp

6 The formation and character of callus and the solidity or otherwise of new bone formed

7 Comparisons of films taken if possible in two planes at specified regular intervals during the treatment offers the best means of arriving at a correct prognosis

8 Before operation it can be decided what variety of internal mechanical fixation will be most successfully used for that particular problem

9 While manipulating under the screen immediately before the application of a splint or plaster-of-Paris one finds out by verification the areas on the limb to which the reconstructive forces have to be applied in order to maintain the corrected position of the fragments

In this country, as you are aware, the British Medical Association appointed a Special Committee of Inquiry in 1912 The records have been compiled with such care, accuracy, and impartiality, that it is a document of the first magnitude Taking all the statistics together, they prove that if the anatomical result is good the functional result is good in 90 per cent of cases, while if the anatomical result is bad or moderate a good functional result is obtained in only 29 *per cent* of cases My own experience entirely supports these findings

Each new fracture is a *fresh problem* and its diagnosis and treatment cannot be controlled by a set of rules which were formulated and did excellent service at a time when the surgeon's vision had to be projected through his finger-tips X rays must be used at every stage if one is to be successful in the treatment of fractures, it is also essential that a mobile X ray plant should be available, to be brought to photograph the patient's limb when he is lying in bed The moving of a patient to an X ray room is liable to interfere with the extension which is being maintained, and thereby may jeopardise the end-result of his treatment If mobile X ray plants were available for the use of any practitioner who required one, in my opinion great advantage would accrue both to the patient and the profession This is no new suggestion, and it was actually in practice at No 8 Stationary Hospital, which was a hutted unit, from January, 1916, until the end of the war. On account of the principles adopted for treatment and of my strong objection to moving patients on a stretcher to the X ray department, it became necessary for us to devise a mobile X ray plant, which was placed on a B R C S motor ambulance, and the scheme turned out to be so satisfactory that radiographs could be eventually taken anywhere in Boulogne base by one of these specially fitted motor-cars

In institutions I am convinced that segregation of fractures under the care of surgeons and nurses who have a special aptitude for and training in the subject will turn out the best results and be the quickest means of returning most if not all, of the lost functions

It is to Sir Almroth Wright I must tender my unforgettable thanks for pleading with and obtaining permission from G H Q in France to first segregate the fracture cases and for assembling the selected personnel and matériel at No 8 Stationary *Hospital*, Wimereux, in 1915 The results, I was informed, were so satisfactory that Sir Robert Jones and Sir Arbuthnot Lane started the hue and cry, and other similar organised units were commenced both in Great Britain and France, and such beneficial results followed that I had hoped that the scheme which had been proved such a success would be more generally adopted than it has been in civil and military hospitals after the war

Importance of First-aid Treatment.

Even after the countless lessons we learnt in the war, is it not tragic to still hear Sir Robert Jones state that "the treatment of fractures in this country leaves much to be desired"[2] *When a medical man* is called upon to attend a case of fracture of a limb, the occasion is generally that of an accident *on* a race course, a motor smash on a country high road, or, possibly, an ordinary street or factory casualty In the latter two instances one is more conveniently placed, as the personnel and material for treatment are probably more ready to hand, whereas in the former urgencies this is generally not so But in all cases the treatment should commence from the time that the injured person is first seen by the surgeon or first-aid worker, and should be continuous and consecutive until cure is effected

Even the help of modern fracture equipment, the X ray screen and a large and varied experience of manipulative treatment of deformities does not necessarily ensure that this form of treatment will be unfailingly successful in producing perfect reposition; it is therefore inevitable in a percentage of cases to have to apply such useful expedients as mechanical pulls, and when these fail then to attack the seat of fracture by direct operation with plating, wiring, bolting, bone grafting, &c When this is indicated the operation should be done within a short space of time after the injury, and then *only* when perfect asepsis can be obtained In any case, the surgeon's immediate action is demanded by the fracture which may be either simple or compound

The same general initial treatment by immobilisation, as laid down by Hilton in his classic on "Rest and Pain," in 1863, is as essential for broken bones and their surrounding soft parts as for every other kind of damaged tissue In a fracture case the only condition which has a prior claim to immobilisation in receiving attention is hæmorrhage

During first-aid treatment, if there is serious bleeding, the wound must have first attention, but when the patient is in no danger from the loss of blood the limb should at once be immobilised by extension and the clothing afterwards cut away for the purpose of applying a temporary dressing to the wound The further progress of the case depends upon the promptness and thoroughness with which the management of the wound is carried out, but I certainly do not advocate the mass excision sometimes seen during the war Excision of tissues should always be as conservative as possible

The principles of the treatment of hæmorrhage are well established but may I strike a note of warning for the cautious use of the tourniquet and to restrict its use to cases of dire necessity The employment of it, except as a temporary measure during an operation, is often a source of danger both to life and limb However if it has been applied it should be made open to the knowledge of all, and it is the duty of the surgeon who next sees the patient to remove it at once and to examine the limb so as to ascertain whether the bleeding has ceased, if not, to employ proper measures for its arrest

In all cases in which it can be efficiently carried out steady digital compression is the best method to employ, but I have occasionally placed an elastic tourniquet loosely round a splinted limb and sent an attendant with instructions to draw the ends gradually tight if necessary, but only up to that point which stops bleeding There is often under the strain of an emergency an inclination to apply it more tautly than is required to prevent the escape of blood and this may eventually determine the fate of the limb or even that of the life

Essentials of Treatment

The first essential is to steady the limb and temporarily fix the broken bone or bones, so that no further movement of them is permitted · by so doing hæmorrhage further laceration of soft structures and shock, which is markedly aggravated by pain, by loss of body heat, and by hæmorrhage will be minimised if not prevented Thus a patient with a fractured femur may if he be kept quiet, properly splinted, and adequately warmed never exhibit any signs of shock, while another with a similar injury may pass into a dangerous state of collapse if insufficiently splinted and exposed to cold Shock is after all proportionate to the sum of the intensities of the factors causing it The initial force used for the purpose of extending the limb, when once it has been applied, should never be allowed to relax as by so doing the fragments are made to travel. These may be jagged sharp, and dangerously spiked ends, especially in oblique and spiral fractures, and in comminuted cases the fragmentary bone may be in extraordinary penetrating shapes and positioned in every direction varying according to the tension exerted on the tissues in which they are embedded, and every time they are allowed to return in the recoil they may, perchance, retrace their path, but how often are new tracks made both in the early stages of treatment and later during manipulation with the possibility of damaging important vessels and nerves, and not only this, but each thrust into the old or into a newly manufactured passage will aggravate the exudation in simple fracture, and spread infection as well much more widely in the compound one Muscular and areolar tissue have comparatively a very small resisting power to infections, and this is still further lowered by these additional traumata

For these reasons the extending force should be continuous and never relaxed from the first pull until we see early callus around and between the cleavage sufficiently firm to cement the fragments together when the consideration of the early movements of the joint will, in their turn, come before us and be carried on through that period when the callus can be bent and angulations have, therefore, to be carefully guarded against up to the time that the union is solid and the limb need no longer be held under restraint

The Value and Range of Usefulness of the Thomas Splint

In the case of the upper extremity, bandaging the arm to the side may perhaps, be sufficient as a first-aid measure, but in the case of the lower extremity some form of splint is required, and there are two splints which do efficiently meet the case in all fractures of both upper and lower limbs These two splints have been so well tested and proved in the Great War, that I cannot conceive any more critical trials to which an apparatus could be subjected

In the leg, the *first-aid treatment of all fractures above the ankle-joint* can be efficiently carried out by the application of the Thomas knee splint, which is by far the finest piece of apparatus in our fracture equipment It is applied in the following way —

If there be a selection of splints with different sized rings to hand, then the transverse circumferential measurement of the thigh over the trousers should be made at the gluteal fold To this figure add 1 inch to allow for the obliquity of the ring and 2 inches for possible subsequent swelling and this should be the inside circumferential measurement of the padded ring Thereby all accessory padding which would be *necessary for an unduly large ring* will be obviated

Maintaining manual extension on the ankle *all* the time, the leg is threaded through the ring of the splint without removing the trousers The ring is pushed up gradually and firmly against the tuber ischii and kept there by the operator, who holds the distal end of the splint against his own thigh, at the same time supporting the patient's leg posteriorly at the site of fracture with one hand and maintaining the extension on the ankle with the other, which is held underneath the inner side bar An assistant takes a 6-inch roller bandage, ties the end to the outer side bar near the ring, and passes it behind the thigh from side to side, first over the inner bar and then back over the outer one, and so on until the whole of the posterior aspect of the limb is supported, the bandage is then fixed to one or other of the side bars, an assistant now takes the extension on the limb from the operator

If the operator has a " boot clamp " he fixes it obliquely to the sole of the boot, if not, he then takes a rigid metal rod or skewer about 12 inches long and 3/16 inch in diameter, pointed at one end This is passed obliquely through the boot between the sole of the foot and the sole of the boot The hole on the outer side should be about 3 inches from the anterior surface of the heel and the inner hole 1 inch from this same surface This allows the leg to lie and to be fixed in external rotation, which is the natural attitude of the leg in the recumbent position, and the one in which it ought always to be ultimately splinted A cork or narrow roller bandage is placed over the pointed end of the skewer for safety and a piece of tape or bandage attached to each extremity of the skewer These are passed, the one just above the level of the side bar and the other just below it, made taut and tied to the V shaped notch at the end of the splint, with sufficient tension to maintain the requisite extension If a boot clamp or skewer be not available the extension can be made with a timber hitch of bandage

The patient is lifted on to a stretcher and a "suspension bar" is applied, from which the side bars of the splint are slung After a limb has once been splinted, the side bars of the Thomas should never be allowed to rest on the same plane as that on which the patient's body and sound leg are lying

If this occurs, the side bars fall back and the limb is forced too far forward, thus increasing the deformity, causing pain, and so altering the correct relative position of the limb to the splint into a faulty one An alternative method of raising the splint is either to attach a "splint prop" to the end of the splint, or to rest the end of the Thomas below the level of the heel of the boot, on some form of support, such as rolled-up clothing, &c , but a suspension bar, if available, is far more efficient

The clothing should be cut off the leg at the site of the *fracture, so as to deal with the wound in a compound* case, and in a simple one to be warned if the bone ends are likely to come through the skin

If a wound be present, the skin round it should be sterilised by painting with 3 per cent picric acid in methylated spirit, any obvious dirt or other foreign body picked out, and the picric solution applied to the superficial surface only of the wound, which is then covered with a sterile dressing, and a prophylactic dose of tetanus antitoxin given A firm pad may be placed on either side of the knee between the limb and the side bars and the leg and the splint bandaged at this level, this will give greater security, and will compensate for the extension through the foot not being a very great one

Cotton-wool or padding should be placed in the space, if any, between the thigh and ring of the splint, so as to make an unduly large ring fit more accurately Any such padding between the outer bar and the thigh wall will prevent the ring from slipping inwards, losing its purchase against the tuber ischii *and so coming* in contact with the middle line of the perineum and the symphisis of the pubes But none of these expedients can be assumed as lasting, nor can they be compared in any degree to the efficiency of a correctly fitting ring

Padding between the anterior half of the ring and the anterior surface of the thigh will render it impossible for the leg to be lifted up into the forepart of the splint thereby allowing the ring to slip up beyond the ischial tuberosity This is an all-important point, for the tuberosity is the only place on which the counter-extension can be taken

Too much extension must not be taken through the foot, and this extension must only be considered as temporarily applied for transport to hospital or nursing home, where permanent extension is substituted as soon as possible If the temporary extension is too great or persisted in too long, pressure of the boot, especially in cold weather, will cause obstruction of the dorsalis pedis artery This remark similarly applies to extension by means of *any noose round the ankle or wrist*

First-aid treatment of the arm —Every fracture above the lower third of the forearm can be efficiently treated by the application of the "swivel arm Thomas splint" This instrument differs from "Thomas knee splint" only in that the ring is round instead of oval and made to swivel at the points of attachments to the side bars, to which it does not lie obliquely *The application* of the splint is very simple

A temporary extension is taken by means of a "timber hitch" of bandage placed over the well-padded wrist The two ends of the bandage are tied to the end of the splint, with a pull sufficient to immobilise the fracture The counter-extension is taken from the anterior and posterior axillary folds when the arm is at the side, but from the side wall of the chest in the region of the armpit when the arm is abducted This apparatus allows the arm to be brought into the side of the body without increasing the extension and so facilitates the transport of the case

A circular bandage is applied enclosing the arm and side bars from the hand up to the ring of the splint in order to complete the immobilisation of the fracture The splint is equally suitable both in the initial and subsequent treatment of any fracture of the arm from the shoulder downwards, but for permanent treatment additions are superimposed to the splint and the patient remains recumbent. The fracture having been extended and immobilised the patient is now ready for transport in an ambulance or train He should be kept warm to combat shock and pain until he arrives at hospital, and morphine may be administered with the same objects in view On admission to hospital the patient is not necessarily removed from the stretcher at once A varying degree of shock may contraindicate removal and suggest rather rest and resuscitative measures for some hours Deaths from shock were eventually reduced from 80 per cent in 1915–16 to 20 per cent in 1917–18 by the early efficient application of the Thomas splint

As soon as the patient is in a fit state, anteroposterior and lateral radiographs should be taken or a stereoscopic pair may be substituted, if the injury is too high up for the lateral view to be secured The further procedure will be governed by the clinical findings and the interpretation of these radiographs

The possibility of a nerve lesion should always be considered Injuries of the peripheral nerves are liable to be overlooked, as the symptoms are frequently overshadowed by the manifest pain at the site of the fracture It is preferable to make this diagnosis before a general anæsthetic is administered. Furthermore, a more accurate prognosis can be offered

If perchance X ray examination is not available, then the fracture is put up in the best position as ascertainable by the eye and hand, and by comparing the measurements with the other limb Extension is applied until reduction of deformity is judged to have taken place and a second pair of radiographs, if possible, is taken with the patient in bed without altering any details of splinting This will afford a correct appreciation of the condition which is present, and prove conclusively if the reduction or setting of the fragments has really been accomplished, or if further manipulation be required

When the position is satisfactory the next pair of radiographs is taken when the fracture is beginning to organise, and this gives an insight to the progress of the case and if the correction is still being maintained

When callus is visible further attempts to obtain exact apposition (not already obtained) will no longer be possible unless open operation is undertaken The necessity for this will, of course, depend on the amount of deformity presented, the loss of function that will follow if the displacement is not dealt with, and the delayed convalescence which will ensue

However young callus can be bent, and may be likened to a candle in a candlestick on a hot day in summer It will bend to almost any degree, and so will callus if it be subjected to a gradual and constant force But, just like a candle, it will crack if too abrupt a strain be put upon it, such as a speedy attempt to correct deformity Still the correction of alignment can often be obtained by a slow and regular stress Before allowing a patient to walk without the aid of apparatus, two radiographs should always be taken in planes at right angles to one another This is the most accurate way of estimating the amount of consolidation that is present in length, in breadth, and in thickness It is sometimes possible in a recent fracture to obtain a radiograph in one plane which will not show any bony lesion whatsoever, whereas one taken at right angles to this will reveal gross deformity, in this case a grave error in diagnosis and prognosis will result from the taking of the picture in only one plane

A fracture, from the point of view of treatment, must be considered not only as a solution of continuity of bone, but also as a lesion possibly affecting muscles, vessels, joints, ligaments, nerves, &c The ideal treatment of a fracture should have for its object complete anatomical reposition of the injured tissues with complete restoration of functional power to the effected part Our aim, therefore, in the treatment of every fracture should be to produce a limb in the most expeditious way as nearly as possible the equal of its healthy fellow, both in function and in appearance

It is impossible to conceal the reality that a great deal of restorable function is lost by lack of proper early attention and that subsequently countless cripples are produced whose only real enjoyment of life is to blackguard us as a profession or the institution in which they were treated

I feel sure that improved results will be *only* obtained when some well-tried method which is efficient, really simple and comfortable is more generally taught and employed

THE EXPERIMENTAL PRODUCTION OF IMMUNITY AGAINST METAZOAN PARASITES,

AND AN INVESTIGATION OF ITS NATURE

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THE experiments described briefly in this paper were carried out in Freetown, Sierra Leone, during the year 1926 and part of 1927 The work was undertaken with two main objects The first of these was to confirm statements previously made regarding the existence of immunity to metazoan parasites, the second was, given such confirmation, to discover whether the laws which govern metazoan immunity are similar to those which govern various forms of bacterial immunity The full account of our experiments will shortly be published in the *Annals of Tropical Medicine and Parasitology*

The experiments were conducted according to a plan which has enabled us to afford complete proof of the existence of an acquired immunity which conforms with the following rigid definition —

> An immunity acquired as the result of previous infection or vaccination, and involving the death of the metazoan parasite in the host within a specified time

This definition clearly excludes the condition of metazoan tolerance described by various writers, in which a host naturally susceptible to, and adversely affected by, a given metazoan parasite may harbour increasing numbers of such parasites with no increase of, or even with diminution of, adverse effects. Weinberg and Julien [1] (1911) concluded as a result of their experiments that horses infected with a certain number of ascarids gradually immunised themselves against the action of the products of secretion of these parasites Gordon's [2] (1925) record of the heavy parasitic infection with ankylostomes which occurred in natives in West Africa, in whom little adverse effect of the infection could be observed, probably comes under this head. Such conditions are not immunity in the sense in which we use the word above, for although there appears to be an immunity acquired against the toxic effects produced by the parasites, the parasites themselves are not destroyed

Previous Records

Surprisingly few records are in existence of the experimental proof of immunity acquired against metazoan parasites as a result of previous infection Fujinami [3] (1916), in a paper entitled Immunity to Macroparasitic Disease, Can it be Acquired ? records such acquired immunity against schistosomes A horse which had recovered from an attack of schistosomiasis and was free from infection was exposed with two control horses to water heavily parasitised with cercariæ One of the controls died within two months, and at the autopsy over 20,000 worms were recovered from its portal system, the second control was killed after an interval and from its portal system 10,000 worms were recovered In the experimental animal which was killed at the same time as the second control, not a single worm could be found in spite of the most careful search Blacklock and Thompson [4] (*1923*) proved experimentally that immunity can be acquired both by man and animals against the larva of a fly which causes cutaneous myiasis in Africa The fly is *Cordylobia anthropophaga*, popularly known as the tumbu fly, its larva penetrates the skin of man or animals and resides there during the period of larval development which lasts about ten days, it produces lesions resembling boils, the immunity is produced by previous attacks and it was shown not to depend on age

That immunity against certain metazoan parasites may in some cases develop as the result of age alone, quite apart from previous infection, appears proved by the work of Herrick[5] (1925) who experimented with chickens as the host animal and the worm *Ascaridia perspicillum* as the metazoan parasite This observer found that chickens of over 100 days old have, by their age alone, no previous infection having occurred, developed a high degree of immunity against the parasite Previously, Ransom[6] (1921) had found that young chickens were easily infected with the gapeworm, *Syngamus trachealis*, while old chickens were difficult to infect, again (1922) the same writer had concluded that age itself was an important factor in the production of the complete or partial immunity enjoyed by pigs of mature age against ascaris

The Present Experiments

For our experiments we again made use of the larvæ of cordylobia, largely because they can be kept under observation during the entire period of their parasitic life, which is spent in the skin and subcutaneous tissues. The details of the technique of breeding, maintenance of larvæ, application to and observation in the skin, are too long for inclusion here and will be found in the fuller accounts referred to above

Fifty-eight guinea-pigs, some imported and some local, were used for the series of experiments, and in all 1650 first instar larvæ were placed on the skin, observed to penetrate it, and thereafter kept under daily observation for a period of six consecutive days Those larvæ which survived to the sixth day were classed as developing normally, this has the disadvantage of telling against our results, because some larvæ in semi-immune animals were able to survive till the sixth day, but proved unable to complete their parasitic life and died in the host animal, it has, however, the advantage that all larvæ could be accounted for, which we found would have been quite impossible in experiments on this scale if we had adopted the obvious method of collecting the larvæ as they emerged from their host prior to pupation

The Production of Immunity—Regarding our figures as a whole, the fact which primarily impresses us is that the first experimental infection with larvæ yields many more larvæ attaining to the sixth day of development than all the subsequent applications taken together Thus of 472 larvæ placed upon the guinea-pigs at their first experimental infection—that is to say, at their first test—231 (49 per cent) survived to the sixth day, whereas of 1178 larvæ put on at all the subsequent applications combined, only 78 (7 per cent) survived to the sixth day We found at the same time that the local guinea-pigs differed from imported English guinea-pigs in their resistance to the development of the larvæ, thus of 180 larvæ applied at the first test of local guinea-pigs only 60 (33 per cent) developed, whereas of 292 larvæ applied at the first test of imported guinea-pigs, 171 (59 per cent) developed We see, therefore, that local guinea-pigs possess a relative immunity compared with imported animals and that both local and imported guinea-pigs acquire a great degree of immunity as a result of previous infection

The Nature of the Immunity—At the first we believed we were dealing with a general immunity affecting the whole animal body, this was a natural assumption from the figures we were obtaining, which showed a steady diminution of positive results in successive tests of the same animals, the steadiness of the diminution was due to part as we shall show later, to the method of experimenting

That we were unable to obtain any reactional evidence of the production of general immunity was, however, significant For example, not only was the repeated endeavour to confer passive immunity by the injection of the whole blood of immune into non-immune animals entirely unsuccessful, but so also were all our attempts to demonstrate the presence of antibodies in the serum of immune animals Complement-fixation and precipitin tests were negative, the whole blood and serum of immune animals possessed no larvicidal properties in vitro, whole blood defibrinated, and active and inactivated serum of immune animals were neither lethal to larvæ living in contact with them for several days, nor did their influence prevent the development of such larvæ in a normal manner when subsequently placed on non immune animals Corroborative evidence of the fact that antibodies in the general circulation play no easily recognisable part in this form of immunity was afforded by the results of attempts to immunise animals by the intraperitoneal and subcutaneous injection of third instar larvæ in the form of an emulsion Three animals were inoculated by each route and tested after a suitable interval, in neither series was any degree of immunity acquired—in fact at the test of the three animals which had received intraperitoneal injections more larvæ developed than would normally have developed in untreated animals It was striking therefore, in view of the above results, to see that not a single larva could develop at all out of 50 put on an area of skin on an immune guinea pig while of 50 similarly applied to an identical area of skin on a non-immune guinea-pig 30 developed normally.

Local Immunity—We were led to the conception of the immunity as a local one by the fact that an animal which had proved at repeated tests to be immune on one skin area might yet permit the larvæ to develop at least partially on another area as yet not tested. This fact escaped our notice at first, because for the sake of convenience we were in the habit of using the same skin areas for repeated tests, and when the animal duly became immune in these tested areas, we thought of it as generally immune Having been driven by our results to the idea of a local immunity, we continued our experiments from this point of view, the highly interesting and important conclusion was thereby reached that we were, in fact, dealing with an immunity which is at first localised to the site of larval development In order to bring out this fact it is necessary to compare (1) the results of a series of tests of a number of animals on unselected skin areas with (2) the results of a series of tests of selected skin areas on the same animals. The figures for comparison are set out in the table from which it is seen that a series of tests of skin areas has the effect of producing a completely negative result after the sixth test, whereas a series of tests of animals on unselected areas gives irregular results Thus it is seen that even the twelfth test of animals may give a result as positive as any but the first test In addition to the conclusive evidence which the table affords of the production of local immunity, we have also here evidence that animals tested frequently in any area tend to become generally

Table showing that Repeated Application of Larvæ to the same Skin Area Results in Complete Local Immunity

Consecutive tests of animals			Consecutive tests of skin areas in the same animals		
No of test	No of larvæ put on	Percentage of larvæ which survived to 6th day	No of test	No of larvæ put on	Percentage of larvæ which survived to 6th day
1st	472	49	1st	614	43
2nd	194	12	2nd	215	10
3rd	156	6	3rd	210	4
4th	160	6	4th	160	1
5th	145	12	5th	132	5
6th	140	4	6th	117	3
7th	183	3	7th	133	0
8th	70	7	8th	41	0
9th	59	2	9th	18	0
10th	19	0	10th	6	0
11th	30	0	11th	4	0
12th	16	12			

immune, which is an indication that the immunity spreads

Spread and Persistence of the Immunity—Evidence of the spread and persistence of the immunity was obtained by direct experiment Six animals were chosen which at their first test with 29 larvæ had a percentage of 62 surviving; at an interval of three months, after being rendered immune on certain regions, they were tested on new regions with 48 larvæ of these only 10 per cent developed

The persistence of the immunity was tested on the same animals by applying larvæ to the previously immunised areas At the first test, as we have shown, 62 per cent of the larvæ applied underwent development, at the test at the same areas three months after they had been immunised only 2 per cent developed out of 46 larvæ applied It should be noted that during the intervening period the animals were kept carefully screened so as to avoid casual infection

It seems clear, then, that the immunity established locally by previous infection spreads out from the original site of immunisation, and that it persists for at least three months. in all probability it lasts much longer, but the limits have not yet been determined by us As would be expected, it was found that animals which had been immunised and were then exposed to repeated infection during a period of over seven months showed a more definite spread and a stronger persistence of the immunity

Association of the Immunity with the Tissues—We have enumerated the forms of experiment which were undertaken in order to prove, if possible, the association of the immunity with the general circulation; these experiments proved that there was very little, if any, such association recognisable by the usual tests Now we may mention certain experimental findings which indicate a definite association of the immunity with the tissues It was found that.—

1 Larvæ which penetrate an immune area of an animal are dead in the skin in the majority of cases within a period of 40 hours—i e., at a time when they are still lying very superficially and are not yet in contact with the blood-vessels

2 When a piece of immune skin was grafted on to an animal which was not immune, the grafted skin retained its immunity, and the surrounding skin of the non-immune animal developed immunity, conversely a graft from a normal animal developed immunity after being planted on an immune area.

3 Skin reactions when larvæ penetrate were not observed in normal animals; in immune and semi-immune animals skin reactions, swelling, and redness usually occurred on the areas previously treated, a reaction was observed to occur on the immune skin grafted on a non-immune animal

4 The immunity is reproduced in the new skin which grows on a denuded portion of an immune area

One series of experiments, however, shows that the skin may depend indirectly on the circulating fluids for its immunity The immunity present in living skin did not persist in the same skin when detached from the animal, larvæ living in it at room and incubator temperature for as long as they did in normal skin also detached.

Eosinophilia

Owing to the prominence which is often given to the occurrence of eosinophilia in many infections with metazoan parasites, we attempted to come to some conclusion as regards its significance in immunity to such parasites In each case our percentage of eosinophils was derived from a count of a thousand leucocytes and this part of the investigation involved the differential counting of nearly a hundred thousand leucocytes The conclusions reached were as follows —

(*a*) Metazoan infection is not invariably accompanied by eosinophilia

(*b*) Immunity against a metazoan parasite may develop without the occurrence of eosinophilia, either general or local

(*c*) Intense eosinophilia, either general or local, may exist without any immunity being present.

(*d*) Intraperitoneal injections of emulsions of third instar larvæ reduce the eosinophil percentage

(*e*) Subcutaneous injections of, and applications to, the scarified skin of third instar larvæ as emulsions increase the eosinophil percentage

Nature of the Immunity and its Production by Artificial Means

It has been possible to exclude both mechanical damage to the skin and the condition of athrepsis as the cause of the immunity Attempts to break it down once it is established, by intraperitoneal injections of oil by the administration of certain drugs and by damage to the superficial layers of the skin have failed We are, in fact, dealing with a true immunity against metazoan parasites, and it is a solid immunity The remarkable phenomena brought to light by the work of Besredka on local immunisation in the realm of bacteriology may find a parallel in metazoan immunity

Some preliminary experiments have been made on production of the immunity by artificial means. While intraperitoneal and subcutaneous injections failed to produce it, much greater success attended our efforts when we permitted larvæ to penetrate and then removed them, and again when we applied emulsions of larvæ to the skin. Of 12 animals treated by these means four developed immunity on the area treated, and the remaining eight in the majority of cases gave a much lower positive rate than normal

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BLOOD-SUGAR CURVES IN CERTAIN MENTAL DISORDERS.

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PHYSICIAN-IN-CHARGE OF NERVOUS DISEASES TORBAY HOSPITAL, TORQUAY, AND THE DISPENSARY, EXETER.

THE carbohydrate metabolism has been investigated in 90 cases of mental disorder, in the hope that either a typical curve might be found correlating with any particular disorder or that some further light might be thrown on the pathology of the diseases

Technique.

In this work the method of Calvert[1] has been used as being the most satisfactory

A quantity of blood (about 250 mg) is collected from a finger prick into a small platinum capsule and weighed on a torsion balance It is immediately dropped into a tube containing 7 3 c cm of distilled water, and when hæmolysis has occurred 0 3 c cm of 2/3 N sulphuric acid and of 10 per cent sodium tungstate added. After shaking and allowing to stand for a few minutes, the blood proteins are completely precipitated, and the mixture is filtered through a starch-free filter paper. Five c cm of the protein-free filtrate (i e, five-eighths of the original quantity) are pipetted off into a special tube and boiled for six minutes with 2 c cm of alkaline copper tartrate solution Two c cm of phospho-molybdic acid reagent are added the whole made up to standard volume (12 5 c cm) with distilled water, and the tubes shaken and set aside for the colour to develop fully Instead of comparing this colour with that produced under the same conditions with standard glucose solutions, Calvert has introduced a fixed colour standard in glass with which the solution to be tested is compared by means of a colorimeter. He has also worked out a curve of correctives for copper reduction, thereby eliminating an appreciable error with high and low glucose concentrations.

In all the cases examined a meal of 50 g. of glucose in 8 oz. of distilled water was given following a six hours fast, and blood-sugar levels were obtained at half-hourly intervals up to two hours

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[1] Calvert, E G B Biochemical Journal, 1924, xviii., 833.

Summary of Cases

Ninety cases of mental disorder have been investigated and belong to the following types —

Anxiety neurosis	50
Epilepsy	15
Melancholia—early agitated, late agitated, involutional, recurrent	25

The cases of anxiety neurosis have been drawn from the Out-Patients' Department for Nervous Diseases at Exeter, the Torbay Hospital, Torquay, or from private practice, and are uncertified Clinically, the majority of these cases had physical signs of tachycardia, palpitation, and a systolic blood pressure of under 115 Mentally, they were over-anxious, hypersensitive, and hypochondriacal, often with some degree of phobia (Table I)

TABLE I —*50 Cases of Anxiety Neurosis*

Case No	Starvation level	After glucose meal (hours)				Case No	Starvation level	After glucose meal (hours)			
		½	1	1½	2			½	1	1½	2
1	09	18	23	11	07	26	1	13	18	2	21
2	08	15	18	15	16	27	1	13	185	185	14
3	07	12	17	165	16	28	1	135	15	15	145
4	095	16	195	18	13	29	1	155	19	2	18
5	1	16	2	17	14	30	09	13	15	16	115
6	1	18	19	17	14	31	09	19	25	14	—
7	095	145	18	165	125	32	09	11	13	19	—
8	125	205	27	25	23	33	12	19	15	16	—
9	14	22	19	155	12	34	12	18	2	19	—
10	1	165	175	13	11	35	08	15	14	15	—
11	14	165	19	18	17	36	09	16	22	13	—
12	18	22	26	25	25	37	12	22	27	15	—
13	12	195	27	2	2	38	095	185	21	23	185
14	14	155	17	15	15	39	12	21	27	22	18
15	14	145	15	14	14	40	1	19	22	16	12
16	13	14	15	15	14	41	175	23	22	18	12
17	1	11	25	14	14	42	1	13	175	175	175
18	1	125	15	16	12	43	08	12	165	18	16
19	1	165	23	17	1	44	11	16	19	14	09
20	1	155	21	34	23	45	105	15	2	21	19
21	115	205	18	115	1	46	14	19	23	245	16
22	115	155	17	14	13	47	08	165	18	16	18
23	09	115	135	12	12	48	12	225	3	255	15
24	1	14	17	2	16	49	1	18	215	21	17
25	11	18	2	17	135	50	11	19	205	165	155

From this table it will be seen that the starvation level is within normal physiological limits in 35 of the cases, and is above this limit in the remaining 15 All show an appreciable rise of blood-sugar values after half an hour, though there is considerable variation in the resulting hyperglycæmia One hour later only 4 cases show any tendency to fall, and there is an increase in sugar values in every other case, many of these readings are high and markedly above normal One and a half hours later 13 cases are still rising, 4 remain at the level reached half an hour previously, and the rest show the intervention of the storage mechanism. At the end of two hours only 6 cases have regained their fasting level, and many still show high values

TABLE II —*15 Cases of Epilepsy*

Case No	Starvation level	After glucose meal (hours)				Case No	Starvation level	After glucose meal (hours)			
		½	1	1½	2			½	1	1½	2
1	12	19	21	24	16	9	11	155	13	13	—
2	14	19	23	245	16	10	12	12	12	11	12
3	11	15	245	185	11	11	09	14	135	09	08
4	11	14	12	105	105	12	125	185	14	11	·09
5	1	17	23	195	16	13	1	14	1	11	09
6	09	13	13	1	09	14	095	14	15	15	125
7	11	15	19	16	12	15	105	15	2	21	19
8	1	17	12	12	1						

Fifteen cases of epilepsy were investigated All were subject to major attacks, and were on luminal treatment at the time of investigation They were drawn from the same source as the cases of anxiety neurosis, and were all uncertified (Table II)

These cases show a wide variation in their curves, only 5 appearing to be justifiably counted as normal in their reaction to the glucose meal After half an hour all but one give evidence of an appreciable rise, which is maintained or increased in all cases except 6 In 8 cases the values are reduced at the end of an hour and a half, but few have reached their starvation level point. Two hours after the meal 7 cases show higher values than at the commencement of the test

Twenty-five cases of melancholia were investigated and have been divided into four groups clinically —

(*a*) Early agitated melancholia, in which the disease had lasted only three or four months and was not apparently associated with the climacteric

(*b*) Late agitated melancholia, in which the symptoms of agitation had lasted over a year, and in some cases up to five years

All the patients belonging to these two groups were under certification (Tables III A and III B)

TABLE III A —*6 Cases of Early Agitated Melancholia* TABLE III B —*5 Cases of Late Agitated Melancholia*

Case No	Starvation level	After glucose meal (hours)				Case No	Starvation level	After glucose meal (hours)			
		½	1	1½	2			½	1	1½	2
1	2	—	11	14	19	1	07	12	18	13	11
2	18	—	12	15	1	2	08	1	12	16	07
3	12	—	1	13	11	3	07	12	17	17	09
4	12	—	09	13	1	4	08	11	15	11	08
5	11	—	09	14	1	5	07	11	15	11	11
6	11	179	18	18	12						

In Table III A all show evidence of defective blood sugar regulation

In Table III B all show a definite degree of hypoglycæmia in the starvation level, but are comparatively normal in their reaction to the glucose meal

(*c*) Involutional melancholia, in which the depression was apparently associated with the climacteric, and was accompanied by bouts of vasodilatation, menorrhagia, or amenorrhœa

(*d*) Recurrent melancholia (manic-depressive psychosis) All except 2 of these cases were certified, and the tests were carried out during an attack of depression (Tables III C and III D)

TABLE III C —*7 Cases of Involutional Melancholia* TABLE III D —*7 Cases of Recurrent Melancholia*

Case No	Starvation level	After glucose meal (hours)				Case No	Starvation level	After glucose meal (hours)			
		½	1	1½	2			½	1	1½	2
1	12	17	15	13	09	1	1	13	16	15	11
2	10	16	19	16	11	2	12	17	22	22	22
3	12	18	18	15	13	3	11	13	16	13	11
4	08	11	15	15	25	4	2	21	22	2	18
5	08	11	15	19	12	5	1	13	16	15	07
6	08	13	19	28	23	6	08	11	13	19	—
7	09	12	16	18	21	7	13	155	21	19	1

In Table III C the starvation levels are within normal physiological limits, but there is a tendency towards sustained high values

In Table III D the starvation levels are within normal limits, and only three cases fail to return to their original value There is a tendency to reach high levels during the course of the meal

Conclusions.

From the above results it will be apparent 1 That there is no characteristic curve for any of the disorders investigated 2 That in anxiety neurosis, however, a failure to return to the original starvation is present in 87 per cent of the cases 3 This failure is in all probability accounted for by a mobilisation of blood-sugar to counteract some toxic process, or by a partial suppression of the pancreatic hormone induced by a similar process 4 It would appear unlikely that the symptoms of mental anxiety are the primary cause of the high levels reached during the meal, as practically none of the cases showed a high starvation level indicating excessive action of the thyroid-adrenalin system prior to the ingestion of the glucose 5 In the cases of epilepsy and melancholia investigated, an apparent defect in carbohydrate metabolism is present 6 The irregular types of curve obtained in certain cases of melancholia are in all probability due to a lack of balance in the endocrine system, as considerable improvement in the mental reaction and type of curve has followed thyroid and adrenalin treatment

I should like to take this opportunity of thanking Dr Porter Phillips for his courtesy in allowing me to carry out part of this work at Bethlem Hospital; and also Captain Mann, of the Maudsley Hospital, for his kindness and help

Clinical and Laboratory Notes.

NOTE ON AN
ADDITION TO THE REHFUSS STOMACH-TUBE.

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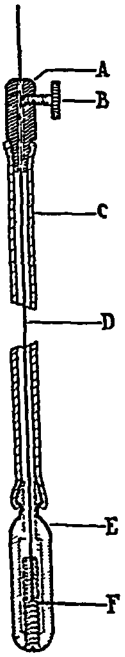

IT is the experience of those who use the fractional method of gastric analysis that many patients have difficulty in swallowing the Rehfuss or Ryle type of stomach-tube Owing to the flexibility of the rubber, little or no assistance can be afforded to the passage little or no assistance can be afforded to the passage of the instrument through the pharynx and down the œsophagus It frequently happens, therefore, especially in patients unaccustomed to the use of a stomach-tube, that it tends to coil up in the mouth or pharynx, giving rise to excessive secretion of saliva and much unpleasant retching The passage of the tube is completely resisted in the unconscious or non-cooperative patient

To obviate these difficulties various modifications of the original model have been devised, whereby a degree of rigidity is provided the tube and its passage thereby facilitated The one described, shown in the accompanying diagram, has been tried and its usefulness proved

The tip, E, is essentially the Rehfuss "olive," but has been made somewhat longer and narrower than this Projecting into it from below is a hollow screw, F which allows a brass wire, D, 1 mm in diameter, to pass into it The wire is contained within the lumen of the rubber tube, C, at the proximal end of which is a small brass attachment, A, through which the wire passes and which possesses a set-screw, B, by which the wire may be secured

Before inserting the wire a few drops of a liquid lubricant (e g, lubafax, Burroughs and Wellcome) should be instilled into the tube by means of a medicine-dropper This allows easy insertion and withdrawal of the stylette The end of the wire is directed into the cavity of the screw in the tip of the stomach-tube the rubber is stretched slightly over the wire, and the set-screw tightened The wire is thus fixed in position and the instrument can be conducted into the œsophagus When the lower end reaches the stomach the metal attachment is removed and the stylette withdrawn

UNUSUAL CASES OF POLIOMYELO-ENCEPHALITIS

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THE following four cases seem worth recording because of their unusual symptoms Similar instances are rare in the literature, though they occur during epidemics of poliomyelitis.

CASE 1 —A boy, aged 21 months, was admitted to hospital with a history of vomiting, convulsions, and loss of sight for the previous week

On examination he was found to be quite blind He had an internal strabismus and a constant upward and downward slow movement of the eyelids and eyeballs, too slow to be called nystagmus There was rigidity of the back and neck and some head retraction The reflexes were normal and there was no paralysis of the muscles The optic discs were normal The temperature was 104 6° F and the pulse rapid The cerebro-spinal fluid was under high pressure but was otherwise normal

The acute symptoms passed off in a few days and the sight gradually returned Recovery was associated with much mental irritability At the end of two months the child was discharged still weak in his legs but otherwise normal The mother reported, two months after discharge, that the boy's temperament was changed since the illness Previously he had been a quiet boy but now he was irritable and subject to violent screaming attacks at any time of the day or night.

CASE 2 —A girl, aged 20 months, was admitted to hospital with a history of vomiting and stiffness of the back and neck for two days

On examination she was flushed and apparently unconscious of her surroundings The eyes were half open and the pupils dilated She seemed unable to cry even when disturbed The temperature was 101 6° F. The knee-jerk was absent on the left side and the left leg was weaker than the right, but there was no definite paralysis or pain in the limbs The urine contained a faint trace of albumin The optic discs were normal The cerebro-spinal fluid was under pressure but otherwise normal

For about a fortnight the child ran an irregular fever, which gradually settled down The stiffness of the back and neck wore off, but it was four weeks before the girl could sit up During the period of recovery she became very irritable She was eventually discharged apparently normal in every way

CASE 3 —The patient was a boy aged three and a half years For five days before admission he had been unable to walk and had been irritable, complaining of pains in the back and limbs On admission he was very fretful and complained of headache, pains in the limbs, and much stiffness of the back and neck The temperature was 99 6° The knee-jerks were absent and Kernig's sign was present The arm reflexes were with difficulty obtained The optic discs were normal The cerebro-spinal fluid was under considerable pressure and contained 0 3 per cent albumin Four days later the child was unable to raise the left arm owing to paresis of the left deltoid muscle

He remained in hospital for about six weeks and steadily improved The weakness of the deltoid slowly passed off but he was left with an intention tremor, most marked in the hands, closely resembling that of paralysis agitans He also became very emotional and remained so until discharge

CASE 4 —A girl, aged 3 years and 8 months, was admitted to hospital complaining of lethargy, almost amounting to coma, associated with marked stiffness of the back and head retraction Three days previously there had been a sudden onset with temperature of 101°, pains in the limbs, and lethargy.

On examination she was stiff in the back and cried when touched Kernig's sign was present The optic discs were normal and the knee-jerks were obtained After admission the temperature fell almost at once and she rapidly improved, being discharged as normal three weeks later

These cases have been called poliomyelo-encephalitis although, if F E. Batten's classification[1] is followed they should be described as poliomyelitis of the midbrain and meningitic types In none of them, however, were the symptoms confined to those of one type Case 1 is the best example of a definite type as most of the symptoms can be located in the midbrain—e g, the blindness and eye movements In Case 3 the subsequent tremor was the only symptom of midbrain lesion All the cases showed stiffness of the back and other meningitic symptoms, and several showed by their subsequent mental deterioration that the higher centres had been attacked as well

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[1] Lumleian Lectures, vide THE LANCET, 1916, i, 809

All four cases were admitted acutely ill, two of them being unconscious This is unusual in poliomyelitis where the initial illness is often mild, sudden, and of short duration The diagnosis was difficult and had to be made from meningitis and encephalitis lethargica Examination of the cerebro-spinal fluid excluded the former To exclude the latter was more difficult as encephalitis lethargica in its onset may present varying manifestations from slight headache to complete coma This difficulty arose particularly in the first case, but the general aspect was that of meningeal irritation associated with certain midbrain lesions such as blindness, which is almost unknown as an early symptom of encephalitis lethargica

The outlook in this type of case is good, judging from the above instances, though the acuteness of the onset and the possibility of subsequent mental defects should make the prognosis very guarded The treatment is largely symptomatic Lumbar puncture is useful in relieving pain and stiffness of the back This is rational as the cerebro spinal fluid always appears to be under considerable pressure

Such cases as those described are not common, but should be recognised as varieties of poliomyelitis I should like to thank the medical staff of the Hospital for Sick Children for allowing me to publish them.

A CASE OF ACUTE INFECTIVE OSTEOMYELITIS

TREATED BY CONSERVATIVE METHODS

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In some cases of acute osteomyelitis of a long bone the whole of the periosteum covering the diaphysis is separated by suppuration, accompanied by purulent infection of the bone-marrow In such cases treatment by the usual surgical methods is generally followed by necrosis of the major part, if not the whole, of the diaphysis, a large sequestrum is formed, surrounded by an involucrum of rough and irregular new bone, and this has to be removed by a second operation after a somewhat prolonged period of suppuration The final result is generally a useful but somewhat unsightly and clumsy-looking limb, the shaft of the bone being thickened and irregular

It appeared to me that it might be possible to prevent necrosis of the diaphysis, with the subsequent formation of new bone and the resulting thickening and deformity, by a thorough disinfection of the bone, the object being to allow the original diaphysis to remain and function I attempted this five years ago with a very considerable measure of success

A boy, six years old, was admitted to the East Suffolk Hospital in June, 1921, on a Wednesday, He had fallen on the preceding Thursday and bruised the left tibia Two days later the limb had become inflamed and very painful, and he had been kept in bed, treated with lotion, &c., for five days before his admission to hospital On admission he was very ill, temperature 105° F, pulse-rate 160, the left leg very much swollen, red, and acutely tender There was no sign of involvement of knee- or ankle-joints

Operation —A free incision was made along the whole extent of the inner surface of the shaft of the tibia The whole of the diaphysis was found to be bathed in pus, and the periosteum separated everywhere The pus was freely washed away, the surface of the bone and periosteum was thoroughly scrubbed first with gauze soaked in 1 in 20 carbolic lotion, then with methylated spirit, and finally with ether, and packed off with gauze, the shaft of the bone was then opened freely for the whole length of the medullary cavity The medulla, which was infiltrated with pus, was cleared away, and the cavity of the bone cleaned in a similar manner with carbolic lotion, spirit, and ether Slips of gauze soaked in bipp were placed between the periosteum and the bone and the cavity was also stuffed with gauze soaked in bipp

On the following day the temperature fell to normal, and all œdema, redness, and tenderness had disappeared. The gauze packing was removed after three days The diaphysis retained its vitality and no involucrum was formed around it There was, however, a little infection remaining in the cancellous tissue at the upper end of the medullary cavity, causing slight fever for several weeks, and leading eventually to the separation of a small sequestrum about three-quarters of an inch in length and about a quarter of an inch in its widest part

A culture of *Staphylococcus aureus* was made from the pus and a vaccine administered for several weeks

At the present time the leg appears normal externally except for the operation scar A radiograph shows that the tibia is also normal in structure, and that there is no thickening or deformity.

A CASE OF TRIGEMINAL NEURALGIA.

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The means of treatment adopted in the following case of obstinate trigeminal neuralgia may be of interest I had occasion recently to look up my notes of it because a fellow practitioner inquired how I had secured relief for the patient.

On July 9th, 1923, the patient came to me, sent by his medical man, presenting the usual alarming and distressing symptoms of trigeminal neuralgia He was edentulous and over middle age The patient, who occupied an important commercial position, had been suffering for some months, and during the periods of attack had been completely prostrate and unable to attend to his business

I need not enumerate the symptoms as they are well known to any who have had the treatment of any such cases The attacks came regularly each evening and were started on the slightest provocation, such as a cold draught of air or the banging of a door. Treatment of similar cases with drugs and applications had never ended satisfactorily in my experience and had usually ended with injection of alcohol in the Gasserian ganglion or even with its removal As the pain started in the lower jaw, I commenced my treatment of an injection of 10 minims of a 2 per cent solution of novocaine into the right mental foramen I was far from sanguine from previous experience that any treatment would cure him, but as he gained some relief I repeated the injection on the following day and then again two days later He had so much relief from these injections that I told him not to come again until he felt any return of the pain He expressed himself as greatly benefited and said that he felt that I had got to the seat of the trouble His relief was so great that he begged me to accept double my fee

I made him a new set of dentures, thinking it possible that a redistribution of the pressure on the alveolus of the lower jaw would be desirable, his old case fitting not at all badly but pressing a little more if anything on the side where the trouble originated He assured me that his old dentures did not hurt him and that the pain was irrespective of wearing them or not When he reported that the dentures were quite comfortable he left me, and I heard no more of him until March 28th, 1927, when I was informed that he had had no recurrence

I have not found that cutting away the alveolus at the spot in which the pain originates gives more than temporary relief Any experienced person is, of course, anxious to avoid severe surgical treatment and to any practitioner who has a case of trigeminal neuralgia which is proving intractable I beg to suggest that the treatment described should be tried before injections of alcohol into, or removing, the Gasserian ganglion—a difficult and dangerous operation

Whisky at a Hospital —At the last meeting of the Galway Hospitals Committee the medical staff called attention to the fact that during the preceding month the bill for stimulants, chiefly whisky, consumed in the hospital was £25, while poultry cost only £15 "These amounts were unusually large" One "part-payment" patient consumed £2 6*s* 10*d* worth of gin in the month A member of the committee stated that up to little more than a year ago the bill for stimulants amounted to £100 a month, but that it was now usually £10 or £12 a month The matter is to be considered by the Economy Committee

Reviews and Notices of Books.

THE INFLUENCE OF MUSIC ON BEHAVIOR

By CHARLES M DISERENS, Assistant Professor of Psychology, University of Cincinnati Princeton Princeton University Press London: Humphrey Milford, Oxford University Press. 1926 Pp 224 11s 6d

THIS book must have entailed a heavy amount of work upon its author; the bibliography covers 12 pages But most of the contents are a resume of results obtained by previous observers, and the original contributions—such as the experimental studies contained in Chapter VIII—do not seem to us to have any material scientific value Everybody knows that rhythmical music has an advantageous effect upon muscular exercise—building, rowing, getting up an anchor by hand, marching, and so on—especially when these exercises are performed by a multitude of workers acting together, for the rhythm keeps the individuals together and helps them individually and collectively Everyone knows that troops march more easily and with less fatigue if they are accompanied by a band or if the men themselves sing a marching song adapted to the rhythm of the footsteps Anyone should march well to the magnificent folk tune called High Germany which is in common time, but it would be difficult if not impossible to march to a curious movement however beautiful—say, a movement in 5/4 time such as appears in Tchaikowski's Fifth Symphony.

Prof Diserens has made a number of elaborate experiments upon college pupils as to fatigue and endurance, accuracy of movement, speed of movement, effect of music on speed, size, form and character of handwriting, together with a study of the effect of single chords on the same element of handwriting, and also the effect of music on voluntary and involuntary reactions The music consisted of records played upon an Edison phonograph and the items played seem to have been mostly of a trivial character, he notes that the majority of a class of 150 students of psychology declared depressive a song called "I'll take you home again, Kathleen" The experiments suggested that music accelerated respiration, a result which can hardly have been expected Surely the tendency, at any rate if good music is in question, is towards a slowing of the respirations, and this fact may be noted by watching the respirations of a neighbour during a performance One of the subjects upon whom the experiments were made had a normal respiratory rate of only 8 3 per minute, while three others had rates of 19 and upwards respectively, so that uniform results could not have been anticipated

Prof Diserens's ideas of what constitutes music are wide In the research to show how musical stimuli affect handwriting the "music" was the following "the chord C E G D was sounded as low on the scale as possible, after five minutes the same chord was repeated as high on the scale as possible; a piano was used to produce the chord which was sounded repeatedly during the writing" We learn that the results of the experiment were almost entirely negative, but why such a discord as a tonic major ninth should have been selected we do not understand

As a collection of results observed and recorded by many workers in various fields the book is interesting, and we thank the author for the story of the lobster—"a lady's pet in Paris, said to be so fond of music that it was always drawn to the piano whenever its mistress played" If Lewis Carroll had only known this we might have had *another* verse to the immortal lobster song, thus —

"'Tis the voice of the lobster
I hear him complain,
You have played it all wrong
You must play it again."

THOUGHT AND THE BRAIN

By HENRI PIÉRON, Professor at the Collège de France Translated by C K. OGDEN, Editor of *Psyche* London Kegan Paul, Trench, Trubner and Co, Ltd 1927. Pp 262 12s

IN his preface the author enunciates with approval an aim of science as "the correlation of psychological facts with physiological mechanisms, neglecting the subjective aspect of consciousness" A reader who regards thought as essentially a subjective process associated with consciousness will be puzzled by this limited definition in a book entitled "Thought and the Brain" The work is devoted almost entirely to a full and well-documented description and discussion of the physiology and pathology of the central nervous system, especially in regard to cerebral localisation as revealed by disease or injury, and to this extent has an unquestionable value But the writer, while setting out to explain mind in terms of neurology, leaps from the known to the unknown in most disconcerting fashion In the midst of a chapter on localised lesions of areas serving the verbal function he refers (p 180) to an aphasic war patient with amnesia who could name an object and yet was unable to repeat its name when asked This hysterical prank is seriously attributed to a "functional injury" debarring the mechanism of evocation by associated paths, and the author discusses the fantasy as if it were an anatomical observation A similar pitfall for the reader is found on page 70, where, after describing the spinal innervation of the pre-axial and post-axial halves of each limb, Mr Piéron gives a reference to a case, described in 1894, in which there was a transfer of localisation from one half of the limb to the other; he gives no hint that in the original account was described a host of hysterical symptoms that suggest strongly in the light of Babinski's teaching that the altered sensation was a hysterical phenomenon induced by suggestion If the author wishes to maintain that hysterical symptoms are due to "functional injury" he owes it to his readers both to define the term and to let them know what they are reading about. Amongst "data of affective pathology" we read that ". . in most cases of insanity . essentially there is only a disturbance of the tendencies, an injury to the affective area . " and this declaration is so closely associated with pathological observations that the reader may again be unwittingly involved in metaphysics The author is unkind to the behaviourists, who take for their motto "Give me a nerve and a muscle and I will make you a mind," but the addition of cerebral structures to the recipe scarcely alters the philosophical position

As a summary of work on localisation, including that of Head on aphasia and of Gordon Holmes on visual centres, the book should be welcome to neurologists, but to the clinical psychologist it will bring disappointment

NERVES, MASTER SYSTEM OF THE BODY

By DAVID FRASER-HARRIS, M D, D Sc, F R S E London Faber and Gwyer, The Modern Health Books 1927 Pp 222 3s 6d

IT is a truism, as the introduction states, that people speak of their "nerves" without having the faintest idea of what the nervous system is, though we might also have been told that they talk similarly of stomach, heart, kidneys, with identical ignorance The author feels it worth while to replace such ignorance by a little knowledge, evidently not believing that bliss is preferable. Accordingly, the reader is introduced, in as simple language as circumstances permit, to the mysteries of neural conductivity, reflex action, cerebral function, decerebration, physical bases of consciousness, and so forth, in an interesting enough fashion, nor is there any pause to consider whether all this can be comprehended of the multitude, although the student of medicine knows well how long his art is and how many years are requisite for the accumulation of theoretical knowledge Short chapters on nervousness and the maintenance of neural health conclude the book. Incidentally, we are told that the health of the nervous system is made or marred in the first seven years of life, and that children of the nervous type ought not to be taught to read till they are about eight years old We find ourselves wondering whether attention to these dogmatisms will result in the disappearance of nervousness in the coming generation, or whether it is possible their importance is overrated. Dr Fraser-Harris has endeavoured to lighten the task set the lay reader by the introduction of apt verbal illustrations and by a few diagrams

Neurology and Psychiatry

Precis de Semeiologie Neuro-psychiatrique à l'Usage des Praticiens By Dr. A Rouquier, Professeur ágregé du Val-de-Grâce Paris · Gaston Doin et Cie 1927. With illustrations Pp 272 Fr 32

The twin sciences, neurology and psychiatry, cover between them so large a field of medical knowledge that any effort to present a compendium embracing both is faced with obvious difficulties at the outset Dr Rouquier's attempt is to be judged on its merits. Some 200 pages are devoted to the semiology of motor and sensory systems (and it is surprising how much of neurology can be comprised under these simple headings), and some 70 to psychiatric syndromes, included under the equally simple titles of constitutional psychopathic states, acute mental disorders, and chronic mental disorders Various of the author's descriptions are sketchy and consequently rather uninforming, others we consider are almost misconceived For example, to group the forms of torticollis under diseases of the basal ganglia indicates failure to appreciate the diametrically differing pathogeneses of the clinical varieties of that syndrome Thomsen's disease and writers cramp, are both, it is hinted, possibly of basal ganglionic origin—in fact, Dr Rouquier does not hesitate to give the overworked corpus striatum the responsibility for a number of dissimilar motor disorders whose objective pathology still escapes us The sections on psychiatry follow the teaching of the French school and offer the reader a somewhat one-sided presentation

The Modern Mental Hospital

By Robert Hunter Steen, M D, F R C P Lond, late Emeritus Professor of Psychological Medicine, King's College, London, and late Medical Superintendent of the City of London Mental Hospital, Dartford London. Methuen and Co, Ltd 1926 Pp 115 6*s*.

Dr Robert Hunter Steen died in July of last year at the early age of 56, after 20 years' service as medical superintendent of the City of London Mental Hospital and a professional lifetime devoted to the mentally afflicted. His outstanding quality was a rare genius for friendship, which he used to explore the minds of those whose chief trial is the lack of friends, and to discover their needs and the methods by which to fill them He succeeded as no one who relies chiefly on his intellectual gifts can succeed in this class of work, and his mastery of the psychology of the border-line case, that most difficult of all the problems of psychiatry, was admitted generally to be without equal A few months before he died he commenced a book in which his object was threefold First, he desired to strengthen true brotherhood between those who could hold their own in the world and those whose minds were unequal to the struggle, between which classes it is now recognised that no line can be drawn whatever except the fortuitous one of the hospital boundary Secondly, he desired to tell the public the intimate facts of the life of patients in mental hospitals, their surroundings, their treatment, and their prospects Thirdly, he desired to bear witness to the magnificent qualities possessed by mental nurses, a profession about which few people unacquainted with mental hospitals know much Although the book was cut short by his last illness, he has amply succeeded in his aims His first chapters describe a walk round the hospital with some friends to whom he is showing the sights the workrooms full of contented, busy and normal looking patients, the bright theatre and dining-room, the up-to-date laundry, the well-stocked farm He then talks of the patients themselves, of the difficulties of certification, and the simplicity of release, of the excellence of the voluntary system He writes clearly and well about the principles of treatment, but is obviously at his happiest when describing the parties, outings, and entertainments of which he was such a fertile inventor, and the patients' delight in them His appreciation of the nursing profession is probably the best thing in the book "I have seen them kicked, pummeled, their faces scratched, handfuls of their hair plucked out by the roots, their dresses rent from their backs, their caps and aprons torn to tatters, and yet I have never seen any loss of temper on their part From their none too extensive stocks I have known them give presents of money or articles of jewellery or wearing apparel to some overjoyed patient. When off duty they have taken patients at their own charges to do some shopping, or to a tea-shop, cinema, concert, or theatre Is it surprising, then, that we who know all these things, when we see aspersions printed about our nurses, are indignant?"

Few writers have ever explained the mental hospital to laymen, and certainly none has ever done it better At a time when the prevention and treatment of mental disease is becoming a more and more urgent problem, the value of a book like this cannot be over-estimated.

Emergency Surgery.

Dringliche Operationen Second edition By Prof. D Alexander Tietze, of Breslau Stuttgart F. Enke 1927. Pp 872. M 33

The bulk of this text-book of emergency surgery is written by Prof Tietze, but other surgeons have contributed chapters as follows anæsthesia, K. Scheyer, infusion and transfusion, Rudolf Reichle, abscess of the brain and meningitis, Hugo Hauke, ophthalmic surgery, George Lenz, nasal surgery, Max Goerke; kidney function estimation and some other urinary work, Willi Hirt, gynæcology, Robert Asch, lumbar puncture, Konrad Tietze The result is a large, carefully compiled treatise on urgent operations, including some operations which can scarcely be designated as urgent The student will find good accounts of any branch of surgery he likes to turn up, whilst the experienced surgeon will appreciate the documented reviews of such subjects as gangrene and septic joints, which are not as a rule presented succinctly in text-books of surgery Useful hints are included as to technique and methods with which the English surgeon is not familiar, for instance, the passage of a stomach-tube with an inflatable ball, which blocks the cardia before administering a general anæsthetic in intestinal obstruction All the sections are not equally good, but the book can be recommended as a sound and reliable guide to emergency surgery

The Conquest of Disease

By Thurman B Rice, A M, M D New York The Macmillan Co 1927 Pp 263. 20*s*

The large title of this book is explained in the preface by the three purposes which the author has had before him, and these, in abbreviated form, are as follows · To set forth the most recent scientific information so that transmissible diseases may be controlled or eradicated, to make the subject interesting to the general reader, and to emphasise the great advances made by science So many books, the author admits, have been written upon this and related subjects, that he has felt considerable reluctance in presenting another, and while candour suggests that there is not much in this presentation of well-known facts that will enlighten men of science, reference to the author's second object may be held to excuse the banalities Dr Rice has certainly been able to tell the story of many of the most important transmissible diseases in a form that will be intelligible to the public, and one, moreover, which should help them to recognise the grounds on which the various scientific means are adopted for their control. The book is readable throughout, and admirably printed; it should have a large circulation and be useful to readers of all sorts, given a good standard of general education

The Human Body

By TREVOR HEATON, M D London Chatto and Windus 1927 Pp 250 7s 6d

THIS book is one of the Simple Guide Series, where the various volumes have the common object to arouse interest in subjects of vital importance which, when treated scientifically, are hedged about as a rule with technicalities forming insurmountable obstacles for the general reader Dr Trevor Heaton has written here an excellent survey of the principles of anatomy and physiology and, assisted by clearness of diction, a well-planned synopsis, and many pertinent illustrations, has been able to tell a long and complicated story with remarkable brevity while maintaining interest throughout It is a tribute to the balance of the book that we cannot point to any one particular chapter as being fuller or less adequate than another, and an educated reader should be able by careful perusal to arrive at a very just view of the fundamentals of human life. One of the closing chapters, which deals with such tremendous topics, among others, as "biology and the future," "racial degeneration," "prevention and cure," and "man and the universe," seems condemned by its contents to be a mass of generalities, more or less assimilated and correlated, it is, as a matter of fact, a perfectly coherent essay in which the philosophy of medicine, never alluded to as such, informs every page.

Punishment and Personality

By HAROLD BEGBIE London Mills and Boon, Ltd 1927 Pp. 126 5s

THIS sketch of modern English prisons, the result of a tour of the penal institutions made at the instance of the *Daily Mail*, contains a great deal of interesting information sanely put; a real sympathy for the prisoners is never made doubtful by any sentimentality, and the character sketches of the inmates and their guardians, from the governor downward, are drawn with a thoroughly observant pen In the last chapter, in which the personality of the criminal is analysed, the author writes ambitiously, but this section of the book, which might easily have run off into clap-trap psychology or misplaced pathos, is a well-balanced essay written in accordance with the author's own warning to his readers that they should regard the State-inflicted punishment for law-breaking not as an attempt towards either a medical cure or spiritual discipline The result of his visits has led him to the opinion that our prison system, though in many ways praiseworthy, has yet far to go, and with this view most medical men will be in accord, and especially those associated with the Prison Service

Edmund Burke

By BERTRAM NEWMAN London: G Bell and Sons, Ltd 1927 Pp 348 8s 6d

Mr Newman has written an admirable biography and one that wanted writing Burke was amongst the greatest statesmen at the end of the eighteenth century when persons of pronounced genius and persons of equivalent imbecility conducted our State affairs We were engaged in international struggles of the most urgent and far-reaching sort, and in this country, leaders, notably Burke, were absorbed in vast political considerations, yet it is a singular comment on the time that a man of such learning, wide sympathies, and profound eloquence—our greatest political philosopher—seems never to have taken any active part in legislation for the amelioration of the social and sanitary conditions whose horrors he so constantly deplored The connexion, for example, between the Gordon riots, despite their religious surface, and the bestial circumstances in which many of the rioters lived seems to have occurred to no one in authority, and to have been voiced only by philanthropic private individuals There seems to be no authentic account of Burke's illness, which ended his life when he was 66, a fairly good age 130 years ago, but none the less an untimely one when unaccounted for by any life-history We know that he was so severely ill for over a year, as to be unable to attend to his literary work, but in the "Dictionary of National Biography" it is said that his disease "was found after death to have been internal abscesses"

Inorganic Plant Poisons and Stimulants

Second edition By WINIFRED E BRENCHLEY, D Sc, F L S, Rothamsted Experimental Station Cambridge: At the University Press 1927. Pp 134 10s 6d

THE significance to the welfare of the animal organism of traces of certain food constituents is paralleled in plants, the presence or absence of traces of inorganic salts may have a profound influence upon growth and development Since the publication of Miss Brenchley's book on this subject in 1914 a good deal of fresh evidence has been accumulated with regard to the significance of the elements boron and manganese As to the former, it appears that though toxic in higher concentrations, a small quantity of the element is in some leguminous plants—especially beans—as essential for healthy development as any of the more abundant elements generally recognised as nutritive in function while peas, curiously enough, grow to maturity and ripen viable seeds in the entire absence of boron As to manganese, small quantities appear to cause a very general stimulation of growth, but it is not yet so clearly established that manganese is essential to the life of the plant The book contains a bibliography which may be profitably consulted by those in search of first-hand information

Diseases of Animals in Relation to Man.

By THOMAS W M CAMERON, M A, B Sc, Ph D M R C V S, London School of Hygiene and Tropical Medicine London Faber and Gwyer, Ltd 1926 Pp 222 3s 6d

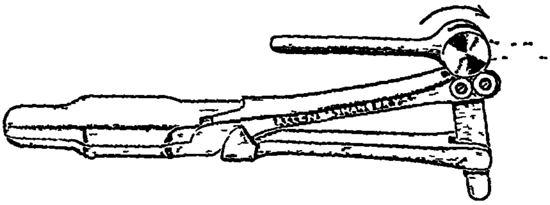
THIS book is an addition to the series of The Modern Health Books edited by Prof D Fraser Harris, who states in the introduction that the series is designed to bring within reach of everyone the latest expert opinions on the chief problems of health He adds with regard to the present volume that "there has not hitherto been written a book precisely similar to this one—a concise discussion of those morbid conditions which are common to men and animals, and on the understanding and control of which so very much of our comfort, health, and prosperity as a nation depends" The author has certainly succeeded in presenting a large amount of valuable information on technical subjects in a form that can be readily understood by the lay reader, and the book should appeal to a wide public, including the medical and veterinary professions

The introduction is taken up with a brief discussion of the general processes of infection and resistance. Tuberculosis in animals and the problems of animal tuberculosis and human health is given a prominent place Other infectious diseases such as anthrax, glanders, rabies, small-pox and cow-pox, foot-and-mouth disease, and diseases of pigs are discussed. An interesting chapter is devoted to animal parasites and fungi Milk in relation to human health is the subject of one of the longer chapters Diseases of birds are discussed separately, as is also meat and meat poisoning Brief mention is made of numerous diseases which are chiefly confined either to man or to animals, and the wide range of the subject matter makes the book a useful source of information, quite apart from its value as a treatise on public health

New Inventions.

ABDOMINAL CRUSHING CLAMPS

IN order to obtain the power required for the abdominal crushing clamp, and especially for that introduced by Mr Ernest Miles, it occurred to me that the use of an eccentrically pivoted disc might prove convenient. The illustration explains the arrangement used The handles of the forceps have slots cut in the terminal portion for the attachment of the pressure device Across one of these a strong pin passes, the other slot is open, but to the outer side of the handle at this point friction rollers are attached, one pair at each side The pressure device consists of a flat bar, slotted near one end to receive the pin in the forceps handle, while at the other end it carries the pivot of the eccentrically mounted disc, which is itself slotted to receive the bar and is provided with a handle for the application of power In use the forceps are applied in the usual way, and after compression by the hand the slotted end of the flat bar is fixed on to the pin in the forceps handle and the eccentric disc pushed on to the friction rollers with the handle of the disc pointing away from the blades of the forceps (position of minimum pressure) where it automatically fixes itself Full compression is then obtained by forcing the lever forwards—i e, toward the blades of the forceps



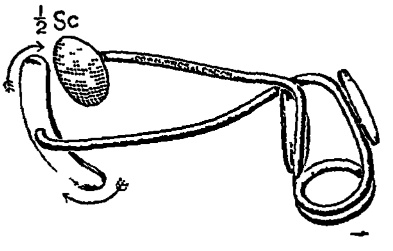
The instrument has been made according to my suggestions by Messrs Allen and Hanburys, Ltd

LAURENCE C PANTING, M D Oxf, F.R C S Eng

(1) A TONSIL COMPRESSOR, (2) A SEPTUM NEEDLE

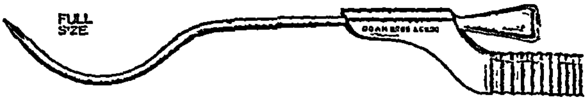
THE *tonsil compressor* (Fig 1) is a light clamp constructed on the principle of the cross-action spring It is self retaining, and no ratchet is required. The instrument is intended for use *during* the operation of tonsillectomy, and not for the arrest of severe hæmorrhage after operation It is not cumbered with any clip for the attachment of a swab. After removal of a tonsil a small swab is placed in the tonsillar fossa by means of a long dissection forceps, and the clamp then applied above this As the proximal part is at right angles, approximately, to the "business end," the clamp can be left *in situ* while the second tonsil is removed, and does not interfere in any way with the use of the guillotine or dissection instruments The second fossa can then be compressed by another clamp, and adenoids removed without any interference and in a field free from bleeding

FIG 1.



A Septum Needle—The use of a hollow needle for intranasal suture, most frequently employed at the end of submucous resection of the septum, is by far the easiest method in the limited space available; and, owing to difficulty in finding a suitable hollow needle for the purpose, I have devised the needle here illustrated (Fig 2) The proximal end is smoothly funnel shaped, and the distal end is bevelled towards the inside of the curve, the length and depth of the curve have been adopted after repeated trials to find the most suitable While retaining a certain degree of "spring," the needle is firmly mounted in a short handle The calibre is such as to admit horsehair, No 000 catgut, or ophthalmic silkworm-gut In use, the needle is threaded up to the point, and, after the needle has been passed through the edges to be sutured the suture is pushed on until it can be grasped by a forceps; the needle is then withdrawn, and the suture is left in place ready for tying Not only can the edges of the incision be readily sutured in this way, but small tears in the septal flaps, even far back in the nose, can be repaired, the knot being slipped back by holding one end of the suture in a Tilley's forceps

FIG. 2



Both instruments are made in stainless steel by Messrs Down Bros, St. Thomas's-street, S E 1

H. ROSS SOUPER, M D Aberd

Reports and Analytical Records.

FRIEDRICHSHALL NATURAL MINERAL WATER.

PROPRIETORS C OPPEL AND Co, FRIEDRICHSHALL, SAXE MEININGEN, GERMANY
AGENTS FOR GREAT BRITAIN AND IRELAND INGRAM AND ROYLE, LTD, 45, BELVEDERE ROAD, LONDON, S E 1

THIS well-known water can be used as an ordinary aperient, for congestion and fatty degeneration of various organs, as a preventive against uric acid, gravel and stone in the bladder, and in the treatment of gout The water is bright in appearance, odourless, and has a pronounced bitter saline flavour When analysed the following results were obtained —

	Parts per 100,000		Parts per 100,000
Total solids after ignition	2700	Iron (Fe_2O_3) } Alumina (Al_2O_3) }	8 0
Sodium (Na)	572 6	Chlorine (Cl)	958 5
Magnesium (Mg)	251 8	Sulphates (SO_4)	920 0
Calcium (Ca)	16 0		2730·0
Silica (SiO_2)	4 0		

Specific gravity—1023 0

It is customary in setting out the analysis of a water to show the acids and bases combined as salts so as to indicate the manner in which they exist in solution. Among other possible combinations this water may have the following composition —

	Parts per 100,000		Parts per 100,000
Soldium chloride	1023	Oxides of iron and alumina	8
Sodium sulphate	523	Calcium carbonate	23
Magnesium chloride	436	Calcium chloride	20
Magnesium sulphate	708		2745
Silica	4		

The water was free from organic impurities

VICTORIA HOSPITAL FOR SICK CHILDREN—Mrs Alexander Campbell has opened an artificial light department at this hospital in Tite street, Chelsea The cases suffering from tuberculous glands are doing well, and Dr Murray Levick stated that the results obtained justified the conclusion that children living in their own homes and attending the hospital for a prolonged course of treatment three times a week progressed as well as those who were sent to Alpine institutions

THE LANCET.

LONDON: SATURDAY, APRIL 30. 1927.

TRIBUTION OF GOITRE IN ENGLAND AND WALES.

countries which enforce military conscription geographical distribution of goitre can be deduced the physical condition of recruits, but in England eliable statistics were available until the recent rt of school medical officers throughout the try on the incidence of goitre among schoolren during the year 1924–25 The investigation nade at the request of the Board of Education, vas not limited to an enumeration of the children showed enlargement of the thyroid. Much eral research was undertaken, and this made it nce again that simple goitre is the outward and sign of a general physiological imbalance ENNETH FRASER, assistant medical officer of for Cumberland, regards goitre as a danger-indicating a grave departure from the normal g of the body as a whole. This departure is ssociated with disease, and Dr. E H. MILLIGAN. sop, points out that in goitrous children there increased incidence of ear, nose, and throat ns, and also of rheumatism, Dr. DUNSTAN R, of Swindon, finds that myopia is twice as n in them as in normal children, whilst other rs, as is well known, attribute a variety of s to thyroid inefficiency Were simple goitre ely to iodine deficiency these far-reaching lic changes would be harder to explain than ieut -Colonel R. MCCARRISON's latest experi-work seems to suggest (see p 916), goitre is ted with an ill-regulated diet short of certain ry factors

apart from concurrent abnormal conditions body which may be related to goitre, it is by ns clear what association there is between toxic ophthalmic goitres and those of the simple With a view to eliciting some relationship M H CAMPBELL recently made a detailed of the school medical officers' reports in order pare the distribution of simple goitre with the ation of deaths from exophthalmic goitre as inable from the reports of the Registrar-l. An initial difficulty was to find a definition tre comprehensive enough to make the results medical inspectors comparable For this e they were divided—though the classification uttedly imperfect—into those in whom the l was so much enlarged that the increase in the the neck was noticed on casual inspection ut measurement or palpation), and those in it was not thus enlarged Previous investiga-ad shown that the incidence of goitre in school-n is greatest at the leaving age, and in his Dr CAMPBELL therefore included only children en 13 and 14 years of age. He found that dual variations in the reports were very great, eighbouring towns or areas where the conditions similar showed such differences that he decided arrange them Small areas were combined in larger ones, and Dr CAMPBELL believes that certain general conclusions can be drawn from the results The figures for county areas were regarded as being most likely to give the geographical information required, and were therefore considered in detail.

The conclusions drawn from the analysis are that goitre is twice as common in the country as in towns, that it is more than twice as common in the west of England as in the east, and that it is nearly three times as common in girls as in boys. Roughly speaking, the incidence-rates for towns, although generally lower. confirm the results for the country areas The urban rates are more variable, as Dr. CAMPBELL says, "possibly because the greater uniformity of a town water-supply may minimise or exaggerate the effect of the average water-supply of the villages and smaller towns of the area" The percentage incidence for London, although not given, is stated to be very low, whilst those for Manchester (9 7), Bristol (7), and Birmingham (6 3) are high. Three maps are given showing: (1) the incidence of goitre in school-children in the counties, (2) its incidence in 17 large areas (rural and urban figures); and (3) the death-rate from exophthalmic goitre in the same 17 areas Comparison of the two last shows a general resemblance between the incidence of goitre and the mortality from exophthalmic goitre; in order to obtain a more objective measurement of the correlation Dr CAMPBELL gives a scatter diagram which, although showing no very close agreement, indicates that simple and exophthalmic goitre tend to increase together. The remaining conclusions reached are that goitre is relatively common in the south-west of England (in which Wiltshire and Hampshire should probably be included), in Hereford and most of Wales, in much of Lancashire, Cheshire, Derby, and Nottingham, and in a Midland area comprising Oxford and perhaps Buckingham and Northampton. Goitre is least common in Glamorgan and Monmouth, Essex, Hertford, and Middlesex, and an eastern area running north from Hertford and Essex up to and including Lincolnshire There is no evidence that proximity to the sea coast is a factor of predominant importance Most of the districts where the incidence is specially low and many where it is specially high are on the sea-coast In England, as in most other countries where the incidence of goitre is known, hills seem to play a much more important part than the sea The apparent correlation between the incidence of simple and exophthalmic goitre is of great interest, though, as Dr CAMPBELL points out, it has to be remembered that a proportion of the deaths registered as due to exophthalmic goitre may in fact be due to hyperthyroidism associated with an adenomatous gland

THE MORTALITY FROM INTESTINAL OBSTRUCTION

INQUIRY into the results of the treatment of acute intestinal obstruction has revealed the fact that the mortality of this serious disease has scarcely fallen with the great advances in general abdominal surgery during recent years Certainly, as in every other surgical emergency, the patient's prospect improves in proportion as he comes in good time into the surgeon's hands, but the toxæmia which is the primary cause of the high mortality-rate develops early and renders futile the most skilful operative technique Early operation under favourable circumstances has not sufficed to bring the mortality down much below 20 per cent, while over a large

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[1] Journal of Hygiene, March, 1927

series of cases it may approach 50 per cent That it should remain almost stationary at this level points to some defect in our knowledge of the pathology of the condition An attempt to clarify the problem was made by Mr B W **Williams** in a recent Hunterian lecture which is printed in our present issue Mr **Williams** points out how the aspect of a patient suffering from acute intestinal obstruction or the ileus of advanced peritonitis resembles very much that of an individual the victim of gas-gangrene The character of the pulse, the cyanosis, the slight icterus, and mental reaction are very similar Indeed, in severe cases of acute septic appendicitis anti gas-gangrene serum has actually been administered with some apparent success by certain French observers Mr **Williams** set out with the hypothesis that in ileus the toxæmia and death which occur in spite of mechanical relief were due to poisoning by *B welchii* He found that this organism, which is an almost constant but not flourishing denizen of the alimentary canal, proliferates abundantly in the obstructed bowel It does not normally grow well in the stomach and large intestine because it is very sensitive to the presence of acid It can flourish in the small intestine, whose contents are alkaline and free from oxygen, but does not get much chance of doing so unless stagnation occurs Favourable conditions, however, prevail in mechanical and paralytic ileus It is not only present in large numbers in the contents of the intestine in such cases, but was found in the vomit of a very large proportion of patients Experiments were also performed which seemed to show the presence of the toxin of *B welchii* in the fæcal contents above an obstruction It is easy to see how absorption by the damaged mucosa could lead to the very grave general condition associated with the later stages of intestinal obstruction or peritonitis, and if, as it seems, the toxin directly paralyses the smooth muscle of the bowel wall, the body would be unable to rid itself of the source of the toxæmia, even though the mechanical block were removed The natural development of these researches was the administration of an antiserum to a series of actual cases of septic appendicitis and intestinal obstruction This clinical test was carried out and appears to have justified the hopes raised by a consideration of the results of the previous researches In a series of 214 cases of obstruction, due to many different causes, the mortality-rate was 24 8 per cent , in a series of similar cases, differing only in the fact that antitoxin was given, the mortality-rate was only 9 3 per cent Mr **Williams** suggests that there may be a further saving of life from prophylactic injection prior to operation, for sudden collapse is not uncommon after the most successful operative relief, due, he suggests, to the sudden flooding of the circulation with a lethal dose of toxin as a result of the relief of strangulation Control of the toxæmia by a lavish use of hypertonic saline intravenously was suggested a year or two ago to the Western Surgical Association, U S A , by Dr T G **Orr**, who also brought experimental evidence in support of his thesis Others have reported favourable clinical results, most recently Dr E P **Coleman**, of Canton, Ill , who has reduced his operative mortality thereby from 50 to 11 per cent A quart of 3 per cent saline is given before and as much, or more, following the operation, with the result of enabling the toxic patient to live until he has recovered from the effect of the surgical intervention These are distinct contributions to our knowledge of very fatal diseases and place within our grasp new weapons against them;

THE FOLLICULAR HORMONE

Double oöphorectomy abolishes the cyclic changes which normally take place in the female genital tract, and it has been concluded that the ovarian influence thus removed is hormonic in nature That this is so is suggested by the experiments of E **Knauer** (1900), who showed that the cyclic changes continue if the ovaries, instead of being destroyed, are merely transplanted to another site in the body Until recently, however, there has been doubt as to which part of the ovaries supplies the hormone Of the various methods employed to localise this function the most direct is the injection of ovarian extracts into test animals, but lack of a satisfactory test for their action made the results inconclusive until, in 1917, C R **Stockard** and G N **Papanicolaou**[1] demonstrated a method of following œstral changes in the guinea-pig by the microscopical examination of vaginal smears It was found that there is, during the cycle, a definite succession of cell types in the vaginal lumen, each type being correlated with a certain phase of œstrus, the identification of these types furnishes reliable data for determining what is happening in the internal genital organs With this accurate method of testing, E **Allen** and E A **Doisy** were able to deal conclusively with the œstrus producing hormone of the ovary They published in 1923 a preliminary report on the results of injecting fresh follicular extracts into rats and mice, and in 1924 a full report[2] of experiments showing that the injection of liquor folliculi into spayed rats and mice induces typical œstral changes, comparable in degree to full œstral development of the genital organs of normal animals They concluded that these injections were a complete substitute for the ovarian hormone—at least in the absence of pregnancy—for they produced in the genital tract the accelerated growth, hyperæmia, and secretion characteristic of the period of œstrus, the changes being as great as those attained in the normal animal under ovarian influences

These observations indicated that the principal ovarian hormone is formed in the follicle, and in the last few years series of experiments have been made which have increased our knowledge further In 1926 E **Allen** and J P **Pratt** published[3] the results of injecting follicular extracts into monkeys and human beings, whose ovaries had previously been removed Growth of the uterus was again found to follow injection and, in women in whom an artificial menopause had been induced, this uterine growth was accompanied by subjective sensations similar to those previously experienced at times of menstruation, though there was no bleeding approximating to that of normal menstruation. Injection was also tried in cases of primary amenorrhœa—that is to say, in girls who had reached the age of 20 without having menstruated Menstruation did not follow this treatment, but again there was an increase in growth in the uterus, though without recognisable subjective symptoms Better results were obtained in girls with irregular and scanty menstruation, an increase being noticed in the amount and regularity of the flow Similar observations have recently been made by L **Brouha** and H **Simonnet**[4] in Paris

The œstrus-producing hormone can be found not only in the follicle but also in placental extracts, and the term "folliculin" should, perhaps, be abandoned in favour of "œstrin," as is suggested by A S

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[1] Amer Jour Anat , 1917 xxii 225–283

[2] Ibid 1924, xxxiv , 133

[3] Jour of Amer Med Assoc 1926 lxxxvi , 1964

[4] Presse Médicale, 1926, ciii , 1619

PARKES and **C W BELLERBY** These English observers have studied the problem from a rather different aspect [5] They point out that as œstrus does not occur in either pregnancy or lactation, it is probable that an œstrus-inhibiting mechanism is set up by the persistent corpus luteum which is formed during these periods—a theory which has been put forward by **L LOEB** The exact nature of the mechanism is not clear, but **PARKES** and **BELLERBY** have shown that injection of œstrin during the early stages of pregnancy overrides the œstrus-inhibiting principle and causes the rapid reappearance of œstrus and the termination of the pregnancy The same result is obtained in the later stages of pregnancy and during lactation, but the dosage required is greater in each case They remark that these results may have a possible application to medicine and animal breeding In cows the undue persistence of corpora lutea is responsible for a type of sterility which is now cured in many cases by squeezing out the corpora lutea per rectum It is possible, they think, that the injection of œstrin would override this inhibitor action of the persistent corpus luteum, and as a result lead indirectly to ovulation and to the restoration of fertility. It is suggested, also, that in the human subject a type of amenorrhœa occurs which is due to the failure of the corpus luteum to retrogress and which is analogous to prolonged pseudo-pregnancy In such cases it would seem that the overriding of the corpus luteum by injections of œstrin might lead to the reappearance of the menstrual cycle In any case it is obvious from the facts which have been discussed that the appearance of an active follicular extract has a considerable application in clinical medicine, and a new field of research has been opened up to those who are interested in these problems

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THE TREATMENT OF RABIES IN CALCUTTA

THE second annual report [6] of the Pasteur Institute in Calcutta deals with the year 1925, when 5585 patients attended the dispensary, of whom three-quarters went through a course of antirabic treatment None of the 247 Europeans or Anglo-Indians who underwent treatment died of hydrophobia, although 33 of the 3921 Indians succumbed It is, however, made clear in the report that conditions were very much more favourable in the one case than in the other Half the Europeans were no more than licked by the rabid animal, only 17 per cent of them had deep bites, none was bitten by a jackal, and 82 per cent presented themselves at the institute for treatment within a week of contact with the rabid dog On the other hand, in 98 8 per cent of the Indians the skin was broken, 46 per cent were bitten deeply, in 33 per cent the bite was of a jackal, and more than one-third did not reach the institute until a week or longer had elapsed after contact Sixteen of them developed hydrophobia either during the course of treatment or within 15 days of its completion, and these can hardly be considered to be failures of treatment; but the remaining 17, which developed symptoms later than this, are set down as actual failures of treatment The number of cases advised is many times greater than in any of the Pasteur Institutes situated in the hills and shows the real service which has been done to the city by its foundation The work has been carried on under great difficulties in a single room of the School of Tropical Medicine, the whole staff working at high pressure throughout the year, including Sundays and holidays

Annotations.

“Ne quid nimis”

A MODERN TROOPSHIP

ABOUT a week ago the transport *Neuralia* sailed, from Southampton with troops for China, and a representative of THE LANCET was given permission to go over her during embarkation It is difficult to know what a trooper will be like during a passage until one has sailed on her, but it was evident that the standard of comfort in such vessels has risen considerably of late years During the war *Neuralia* was a hospital ship, being first fitted out at Alexandria by the Red Cross, now she has been trooping for three years and has all the fittings that are required and a staff that knows its business. A transport nowadays is not filled to the brim as in former times The men have more space, consequently the messes are less crowded, and in *Neuralia* this means that there are no messes amidships, where the accommodation corresponds to the inside rooms of hotels, or the inside cabins on mail steamers This is a great advantage The hammock plan, too, has been carefully rearranged to ensure that the men's mouths are more than 4 feet from one another so as to minimise the spread of infection by droplets in sneezing or coughing By way of additional ventilation this ship has some air-blowers about her decks; flat electric fans are fitted in considerable number on the troop decks, and there is one in each cabin Though these fans do not bring in fresh air they circulate what there is and utilise the whole of its drying power to the increased comfort of the inhabitants As the R A M C officer in medical charge on a transport is now in charge of the crew and their living arrangements, our representative was allowed to see the accommodation provided for the lascars and this, after the excellent troop decks, he found disappointing “No doubt,” he says, “the men berthed here had each the 72 cubic feet the Board of Trade requires they shall have, and probably they had all the light the Board of Trade thinks sufficient, yet, compared with those others, the lascars' crew spaces can only be thought dark and crowded, though much trouble was clearly taken to keep them clean”

Drinking water taps are on all troop decks and the water is sterilised when necessary The washing arrangements for the troops are very complete, there are tip-up wash-basins with a supply of cold water, and under each basin is a small trough for washing clothes Over the impervious floor of the ablution room are the douches which will be found so useful in the tropics Large canvas baths are also carried in which, when they are rigged up on deck, a man can swim a few strokes There is a dispensary for the troops aft, and a small hospital, while on the detached poop is an isolation hospital of three beds with a cabin for an orderly, here, too, is a steam disinfector It is expected that a quarter of the men will every night be either on duty or sleeping on deck, but actually it is probable that about half of them will sleep on deck once the ship passes Port Said, for it is hot now in the Red Sea The messing scheme promises well For breakfast the men get tea, porridge, and a second course of kipper, fresh fish, or sausage; for dinner they have roast, boiled, or stewed fresh beef or mutton, potatoes, and a vegetable—green for some days after leaving port, and dried thereafter Tea is the same as breakfast but without porridge and in the hot weather corned beef (cooled in the refrigerator) will be an acceptable substitute for sausages For supper there is cocoa and ship's biscuit Every man may have, on payment, a pint of beer with his dinner and there is a canteen At dinner-time every day the orderly officer produces his mess board and adjusts complaints, if there are any

The men embarking our representative states, seemed a more even and, perhaps a sturdier lot than before the war There was no confusion, and what used to be called "language" was not heard, which may have been due to the greater space provided per man At any rate it is clear that the recent improvements in the transport of troops by sea have justified themselves in the lessening of illness, whereas in 1913 there were 631 admissions for illness per 1000 men carried by sea and 1 08 deaths, in 1925 there were but 184 admissions and no deaths at all Thus the R A M C makes progress in its admirable work for the prevention of disease in the Army at sea no less than in the Army ashore

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[5] Jour Phys 1926 lxii, 145 and 301

[6] Bengal Secretariat Book Depôt 1926 1s 6d

B C G. VACCINE

A YEAR ago we reviewed [1] at considerable length the collected reports, extending over a period of years, of Prof A Calmette [2] and his collaborators on the use of the prophylactic antituberculosis vaccine B C G. This vaccine is prepared from a bovine strain of tubercle bacillus which, at the outset of the immunisation tests, had already been subcultured for a period of 13 years on a medium of glycerinated ox-bile until its virulence had become markedly attenuated and it could be inoculated in the living state without producing harmful effects The vaccine has been administered to laboratory animals and to calves—orally, intravenously, and subcutaneously—and for the past three years has been given by mouth to new-born children in the first fortnight of life It will be remembered also that a series of experiments on the higher apes in a tropical island was undertaken with encouraging results, and gained considerable prominence in the lay press The earlier reports seem conclusively to have demonstrated the fact that the vaccine is harmless, even when given to new-born infants The next point to be established by Prof Calmette was the value of the vaccine as a prophylactic agent This is obviously a more difficult matter requiring much time and patience in waiting for results and collecting records Prof Calmette has now brought together a number of these records [3] in what is for practical purposes a monograph of the subject up to the end of 1926' By this date the number of children vaccinated is known to have reached 21,200 Presumably these figures include those given in the previous monograph a year ago No complete analysis of the whole of these figures has yet been attempted, but several reports of special groups are now given The first of these is by Mr Moine, statistician to the Comité National de Defense contre la Tuberculose, and is concerned only with infants which have been in contact with a tuberculous person or have been living in a tuberculous environment The total number thus investigated is 982 From this figure 13 are deducted because it was found necessary to remove them from their tuberculous environment Of the remaining 969, 882 are reported upon one to two years after vaccination, they show seven deaths from tuberculosis and 72 from other diseases, whilst 87 reported upon more than two years after vaccination show no deaths from tuberculosis It is concluded, therefore, that the mortality from tuberculosis amongst these vaccinated cases in the second year of life is approximately 0 8 per 100 living, and from all causes 8 9 per 100 The mortality in the same age-group amongst children born of tuberculous parents or living in a tuberculous environment is placed by Prof Calmette from available records in various European countries at 26 per 100 living By way of comparison statistics recorded by Dr Ott, of the Hygiene Department of the Seine-Inférieure, and by Dr Morlot, of the Dispensaire Brouardel of Havre, are given These and other reports from Belgium, Rumania Greece, Algiers and Indo-China confirm, in the main, the statistics of the Comité National The monograph also contains reports of an experiment in prophylactic vaccination of calves on an infected farm, some experiments upon laboratory animals, and a long report of a Ukraine Commission on the subject by Prof S Zlatogoroff The work on the infected farm of Gruville shows that at the commencement of the experiment in 1921 41 7 per cent of the cattle were reactors to tuberculin whilst there had been unmistakable post-mortem evidence of tuberculous infection From 1921 to 1926 B C G vaccine was administered to the calves born each year At the end of 1926 the position was that 11 animals of the original infected stock still remained 58 born since the experiment and vaccinated shortly after birth had been added to the herd, 30 had been slaughtered for commercial purposes without evidence of tuberculosis being found, whilst 22 had died of diseases which were found to be non-tuberculous No precautions against tuberculosis other than B C G vaccination had been adopted on the farm during the experiments Prof Calmette sums up this work in his own inimitable way—"simplicité, innocuité, efficacité" We have already indicated in the previous review our opinion that much painstaking research is still required before a final conclusion can be drawn The need is not so much for piling up large numbers of statistics as for intensive research on those patients and animals already vaccinated. In the case of the infants a systematic scheme of after-care with periodic re-examinations is obviously required So far the post-mortem evidence on the cases (children and animals) which have died appears to be weak as regards inclusion in the non-tuberculous group

VITAMIN D IN WINTER MILK

INTERESTING attempts are being made to improve the value of winter milk in vitamin D. It is an unfortunate dispensation of Nature that just at the winter season, when the human being is deprived of ultra-violet light, many of his chief articles of food also decline in their content of vitamin D from the same cause The animals and plants growing in these islands are also deprived of ultra-violet light in the winter and their value as food accordingly diminishes The diminution is most marked in the case of cow's milk and its derivatives and constitutes a serious problem in the feeding of infants and young children, particularly in the north, where winter conditions of life, both for children and cows, last so much longer than in the south The prophylaxis of rickets in such young children might be secured by the universal administration of cod-liver oil, but though it is found possible to secure a very wide use of it, such a *universal* consumption seems unattainable Nor can ultra-violet light be distributed generally, and in any case universal prophylaxis for the winter would be more naturally accomplished by dietetic means A distinct step towards that most desirable goal has been made in the work of Dr J. Golding, of the National Institute for Research in Dairying, in cooperation with Miss K M Soames and Dr S S Zilva [1] of the Lister Institute These workers have been successful in raising the vitamin D value of cow's milk by feeding the cows with cod-liver oil. Such a means of improving the vitamin D content of milk should add little to the price of the milk and compare favourably, as regards the cost of production, with direct irradiation of the cow The latter method is being practised by Prof C Pirquet [2] in Vienna, where the problem is an even more serious one, since the cows which provide the milk for the city are kept in stall all the year round, and the milk given is consequently always a winter milk in its content of vitamin D Prof Pirquet has had some very promising results, both with animals and children, when using this milk, and though the method is at present experimental—it has only been applied to two cows—it would be easy to apply it to all the cows, some 20, in his model stall The mercury-vapour quartz lamp is movably suspended from the roof and at present only travels as far as the second cow, but it could easily be made to travel the whole length of the stall With Viennese conditions and prices this method has not been found too expensive Attempts such as these are encouraging and point, we hope, to a time when it shall be compulsory for nursery milk, if not for all milk, to be produced in such a way that its vitamin D content can be guaranteed to reach a definite standard At the same time it is essential that the cost of the milk should not be materially increased

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[1] THE LANCET, 1926, i, 1046

[2] Annales de l'Institut Pasteur, 1926, xl, 89

[3] Ibid, March, 1927, xli 201

[1] Biochem Journal, 1926, xx, 1306

[2] V Bruck, C Pirquet, and R Wagner Appearing shortly in he Klinische Wochenschrift

THE TEACHING OF BACTERIOLOGY IN LONDON

THE supply of young and well-trained bacteriologists is unequal to the demand for them both in this country and abroad, and this deficiency must be regarded as partly due to a lack of facilities for the training of suitable students These facilities may be provided either before or after graduation Bacteriology may be recognised as a subject for a science degree—as is now done at several of the universities—and thus form an important part of the undergraduate's training, at Cambridge a course of bacteriology can be taken, with pathological work by those who go on to the second part of the Natural Science Tripos Alternatively, the instruction may be given after medical qualification, and for this purpose it is convenient to provide a whole-time course leading, perhaps, to a university diploma In London, especially, it is desirable that such courses should be made available, if only as part of the scheme for making London the main centre of post-graduate education within the Empire It is satisfactory, therefore, to learn of the opening in October next of the Division of Bacteriology and Immunology of the new London School of Hygiene and Tropical Medicine The board of management has decided to start the work of this division in temporary premises in Gordon-square pending the completion of the school buildings, and during this interim period a whole-time post-graduate course in bacteriology will be given under the immediate direction of Prof W W C. Topley who is to occupy the university chair of bacteriology and immunology in the School It will not be possible to arrange instruction for candidates for the Diploma in Public Health until the accommodation to be provided in the main building becomes available In the meantime inquiries about the bacteriological course should be addressed to the Director of the London School of Hygiene and Tropical Medicine, at 37, Torrington-square W C 1.

THE HAIRMYRES TUBERCULOSIS COLONY.

THIS institution chiefly serves the middle ward of Lanarkshire, though patients are admitted from other parts of the county and from outside The report of the physician-superintendent Dr James Johnstone, shows that 306 patients were discharged during 1926 Of these 149 were pulmonary and 133 non-pulmonary tuberculosis, and the remaining 24 included three cases of syphilis two of bronchitis one each of bronchiectasis and gastritis, and 17 in whom no tuberculous lesion could be detected Miners exceeded other occupations among the patients, mining being the chief industry of the area Of the 149 pulmonary cases, 51 belonged to the early maturity age-group (between 25 and 45 years) 59 per cent had been ill for over four years and 75 were in the Turban-Gerhardt stage I Of the 75 stage I patients 24 showed arrest of the disease of the 47 stage II, 6 and of the 27 stage III none The average duration of stay was 300 days for stage I 330 for stage II, and 247 for stage III, and 21 per cent had a positive family history The 133 non-pulmonary cases included 78 of cervical glands and 20 abdominal cases, and the average stay for children was from seven to eight months one year being the duration aimed at About 30 per cent gave a positive family history. The discharges included 52 ex-Service men and 102 of the 125 adult males discharged were registered for training Thirteen per cent of the adults admitted gave a positive Wassermann reaction as compared with 5 per cent in the previous year

It was a good summer for heliotherapy and satisfactory results were obtained among the children. Some 33 patients had artificial light treatment, the cases which did best being lupus, glands with discharging sinuses and tuberculous abscesses of the soft tissues (scrofuloderma) Dr Johnstone comments on the fact that the more advanced broken-down glands did better than the enlarged glands which had not broken down. For 29 the carbon arc was used, for three the mercury vapour, and for one both Dr Johnstone prefers the polar white flame positive carbon with the solid ordinary negative carbon, when used in the open carbon arc lamp He is inclined to recommend the installation of both types of lamp for clinics, the carbon arc for general and the mercury vapour for local treatment The average number of scholars in the open-air school was 93. In the colony departments, the working hours varied from two to six per day; the number of patients enrolled for training was for gardening 46, for the forest nursery 65, for the poultry farm 63, for the piggery 24, and for the institution workshop 11 The guinea-pig department had a heavy mortality among the young stock from an obscure disease with diarrhœa as the chief symptom

The industrial workshops had 24 trainers in the motor-repairing department, 19 in cabinet making 11 in boot repairing, and 9 in basket making As regards the first, the two motor lorries of the colony are kept in order, while the Ford Motor Company kindly lends the latest type of chassis for the training; and the three trainees who entered for the certificate of the Scotch Automobile Club were successful As regards the last, it is noted that there is a dearth of good basket makers in Scotland and that pigeon baskets, for example, can only be procured in England Approximate figures are given of after-results of training Thus, of ten men trained in cabinet making, four are working at the trade, while two out of four, five out of ten, and 16 out of 20 are now working at the basket making boot repairing, and motor repairing respectively for which they were trained

SARCOMA OF THE RECTUM

ACCORDING to Dr J H Weeks, of the Lankenau Hospital Philadelphia who records an illustrative case,[1] sarcoma of the rectum is an exceedingly rare condition Among 100 malignant rectal tumours Hartmann and Quenu did not find one sarcoma; inquiries at 150 of the principal hospitals and museums of Great Britain and Ireland produced only two cases whilst among 500 patients operated on by D'Hochenegg from 1900 to 1907 for malignant growth of the rectum only four had sarcoma the growth being of the melanotic type in two of these Although approximately 100 cases of sarcoma of the rectum have been recorded, the number would, in Dr Weeks's opinion, be reduced by over a half if the questionable cases were excluded The growth usually begins in the submucous coat as a small, nodular mass movable on the muscular coat and absolutely independent of the mucosa which is usually intact As it progresses it tends to invade the mucosa, when ulceration frequently occurs Sarcoma is, as a rule, hard in consistence until ulceration takes place when it becomes soft and spongy. Rectal sarcoma is much commoner in men than in women in the ratio of about 5 to 1; the ages recorded range between 35 and 81 years The symptoms differ only slightly from those of carcinoma, but the latter ulcerates more quickly, gives rise to cachexia sooner, involves the lymphatics and is practically never pigmented Sarcoma generally causes less pain than carcinoma and the spread is by the blood stream rather than by lymphatics X rays and radium, Dr Weeks considers are valueless in the treatment, owing to the rapid and fatal metastases which may take place, an early and very radical operation is indicated His own case was that of a man, aged 40, who in spite of repeated operations and X ray treatment died of general sarcomatosis seven months after appearance of the first symptom.

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[1] Surgery, Gynecology, and Obstetrics March, 1927

WANTED, A SCIENTIST

AN advertisement in THE LANCET this week states that, certain preliminary work with children of 4–7 years of age having been done successfully at the Malting House School, Cambridge, the directors of the school propose to make a full-time and long-term appointment of a suitable man to introduce young children to science and scientific method The directors are prepared to pay a salary that will enable a successful candidate to leave his present occupation whatever that may be, an openhanded policy that indicates awareness that the search for the man may be a difficult one The advertisement sets out the nature of the problems which he will have to tackle, from which it appears that the pedagogue—using the word in its exact sense—will need to understand the urges of the childish mind, that he may discover how these can be best converted into a controllable instrument of organised thought The use of apparatus specially designed for children is considered a necessity, and this must be of a sort that lends itself to any modification that is required by the growing intelligence of the child, the methods of instruction are to be developed alongside of the developing child, his immature mental processes being studied, and the demands of reality being graded to his capacity The directors of the Malting House School state that while they are willing to consider applications for the post from the teaching profession, they look rather to a man who has already engaged in some sort of scientific work and whose reactions to children have not been influenced by the necessity of teaching them Sir Ernest Rutherford, P R S, Prof. Percy Nunn, and Mr J B S Haldane will assist in the final selection of a candidate for a highly original appointment

ARSENICAL CONTAMINATION OF FOOD

SINCE the great "arsenic in beer" scare of thirty years ago various sources of arsenical contamination of food have from time to time come to light A not very obvious source of this unpleasant element was pointed out in 1924 by G D Elsdon, who examined 51 wrappers of proprietary breads and found arsenic in nine of them No enterprising daily journal has taken up this matter under the attractive headline of "Death in Wrapped Bread," but the question of arsenic in wrappings has been further investigated by Mr T Hedley Barry, who has published a paper in the current number of the *Analyst* on Arsenic in Printing Ink He points out that the source of arsenic in the wrapping papers was probably the printing ink of the labels, which were blue, purple, and green, and as more brilliant colours are used in the wrapping of confectionery he has investigated some of the papers used As confectionery is frequently of a moist and sticky character and is largely consumed by children who are as frequently of a similar character he wisely suggests that the limit of arsenic should be almost as stringent for the wrapper as for the wrapped The practice of manufacturing confectioners is usually to stipulate from the printer that arsenic-free colours shall be used, and he in turn passes on this requirement to the ink-maker But arsenic may be present in the paper itself, and this may be a much more important matter when the amount of printing is small The limit of arsenic proposed for beer—namely, 1 in 700,000 or 1/10 gr per gallon—would be impractically rigid for printing materials, zinc oxide, for instance, of B P quality, with its limit of 1 in 100,000, would not pass this test It appears that the wrapper seldom weighs more than 5 per cent of the total weight and that about 0 5 g per square metre is about the limit of ink on paper Mr Barry considers, having regard to these facts, that ink containing less than 1 part of arsenic in 50,000 of pigment may be used unconditionally, that those containing between this limit and 1 in 20,000 may be used with the less arsenical ones, and that none exceeding this limit should be used at all A variety of colours examined fell mostly in the first class Arsenic has been found, as is well known, in imported American apples Lendrich and Mayer (2 Unters. Leitungsm, 1926, lii, 441–457) have found arsenic in dried pears (unpeeled) and even in partly peeled apple-rings It is possible to be too exacting in requirements as to the quality of food, but these various sources of arsenic, like those of boric acid and similar preservatives in foods, need careful watching It may be that the day is far distant when the poisoner will kill his victim by means of a carefully chosen diet no one article of which comes within the scope of the Poisons Acts, but the detection of arsenic in food products and their adjuncts does point to the possibility of injury to health of a kind to baffle the physician as to its origin and nature and to complicate the action of the drugs he may see fit to administer. So far as can be seen, it is likely as new methods of treating, packing, and distributing food products are adopted new sources not only of arsenic but of other poisonous substances will need to be guarded against. This is a matter on which the Ministry of Health and the medical profession should keep watch.

THE ENGLISH PUBLIC-HOUSE.

THE amenities offered by the public-house have been made the subject of constant strictures in the press, and not long ago in these columns the suggestion was made by a writer that it was to the interests of the extreme temperance cause to see that no improvements took place, because with the betterment of the public-house there would disappear one of the most obvious arguments against the use of alcohol In Carlisle there will shortly be opened a model place of refreshment in the heart of the town, replacing an old public-house, and it seems that the new establishment may serve as an example of what can be done to render the public-house a place of pleasant resort and a useful centre for the promotion of social activities The premises are thoroughly well equipped and arranged in such a way that both sexes can use them either in common or reserved rooms, but the character of the public-house will be preserved—that is to say, that, while such adjuncts to drink as bread-and-cheese, sandwiches, and cake will be provided, there will be no restaurant. The house will, in short, be one "licensed for the sale and consumption on the premises of intoxicating liquors," and, while not pretending to be anything else, will be a demonstration of the fact that the business of the public-house can be conducted with general propriety and with comfort to all concerned Those who know anything about public-houses, and those who have actually used them, know that this is not a new thing, and that the wholesale denunciation of all public-houses, because some of them are revolting places, is unjustified For the benefit of persons who have been led to think that the lowest type of drink-shop is typical of all public-houses, we may commend a little book which has just appeared, describing fully the English public-house [1] Mr Selley does not enter the arena of controversy upon the drink question He states that the main business of public-houses is concerned with the sale of intoxicating liquors, and then details the results of a long investigation into the various types of public-houses to be found in typical communities and localities, and into the uses made of them by their frequenters The efforts towards reform made by "the trade" itself are set out, and in particular the substitution in Carlisle of a large measure of State ownership for private ownership is shown to have been attended with obvious advantages The book is written throughout with studious moderation, and the main conclusion come to is one which will receive medical endorsement Acknowledging that trade in liquor must be a dangerous business, the author finds that the safeguards of laws and regulations set up by the community do not balance the pushing power of private profit-making And while there are many well-managed public-houses, there is a preponderating quantity of drink-shops where no social attractions of any sort are offered and where the inmates of the hospital and the burial ground are recruited

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[1] The English Public-house as It Is By Ernest Selley. London Longmans, Green and Co 1927 Pp 181 5s

VACCINE TREATMENT OF ENTERIC FEVER

THE value of T A B vaccine in prophylaxis is hardly in dispute At the General Hospital in Rangoon Major M L Treston has continued his investigation of the effects of the injection of enteric group vaccine in the treatment of enteric fever[1] His material consisted of 151 cases of enteric fever, but in the absence of controls it is difficult to gauge precisely the significance of the results In this series there were five deaths which the author regards as less than might have been expected with other lines of treatment In 139 cases the fever is said to have been curtailed but details are not given The vaccine was injected hypodermically commencing with a dose of minims ii, increased at each injection by minim i up to a maximum of minims x The strength of the vaccine is not stated Major Treston comes to the conclusion that vaccines are of undoubted use in the treatment of enteric fever in that they curtail the pyrexia, limit toxæmia, and prevent complications The same conclusions in regard to the therapeutic use of enteric vaccines in the treatment of the enteric fevers are arrived at by Dr. K D Fairley in an article originally published in the *Medical Journal of Australia* and now republished in Vol II of the Collected Papers of the Walter and Eliza Hall Institute of Research, Melbourne Dr Fairley injected the vaccine intravenously for three or four days in succession, commencing with a dose of from 50–120 millions and working up to 200 millions No ill effects were noted in any case, not even in that of a boy of 14 who received 16,000 million bacilli in one dose by mistake Analysis of the tables points to the conclusion that the treatment is of less value in children than in adults Whereas in the adult series the total period of pyrexia is 26 days in the vaccine treated as against 36 days in the non-treated the corresponding figures in the case of children are 34 and 30, and whereas in the adult series the death rate is 7 5 per cent in the treated as against 10 3 per cent in the non-treated cases, in the case of children the corresponding figures were 13 3 in the treated as against only 6 7 per cent in the non-treated cases In this respect the author's figures hardly seem to bear out his conclusions

SUPERFICIAL RADIUM THERAPY

THE variation introduced by Mr Hayward Pinch, the Director of the Radium Institute, in his series of annual publications makes each volume of independent practical use, while the series as a whole already covers most of the ground of radium therapy This year all those maladies which affect the glabrous skin, mucous membranes or subcutaneous tissues and respond favourably to exposures of Beta radiation of comparatively short duration are discussed in a handy volume of 64 pages, divided into 14 chapters Since knowledge of the histology of the skin and its appendages is essential to the correct appreciation of the pathological changes a short description of the normal microscopical appearances is given, and the brief summary of ætiology and pathology which accompanies the clinical account of each condition will help the reader to understand the reasons for the duration and character of the exposures advised Hypertrophies, new growths, and congenital affections of the epidermis occupy the first part of the book, new growths of the corium follow, and the other chapters are concerned with angiomata inflammations of the skin; affections of the hair and of mucous membranes

Radium is said to be of great use in the early stages of Dupuytren's contraction, in favourable cases the fibrosis is greatly diminished, the contraction lessened or abolished, and complete extension of the affected joints rendered possible The patient should be warned of the chances of recrudescence As to capillary and cavernous nævi, some of the plates show excellent results in unsightly lesions which would obviously have been too large for successful treatment by carbon-dioxide snow The cosmetic side of radium treatment is further exemplified in hypertrichosis in women If the areas affected are extensive the treatment of the individual hair follicles by electrolysis is so tedious and trying that patients are apt to become disheartened and to refuse to persevere with the process In such instances Mr Pinch holds that it is justifiable to resort to radium, since excellent results are often obtained by its use Treatment must be conducted with caution, otherwise telangiectases may appear later over the areas irradiated Three exposures with applicators containing 0 25 cg. of element per square c cm, screened with 1 mm of silver should be given on each of three successive days, and repeated at intervals of from four to five weeks, three series of exposures in all being administered The duration of each exposure varies from four to six hours, according to the density of the hair growth A gradual atrophy of the hair follicles is thus induced, the hairs fall out and rarely if ever reappear Phototherapy is more favoured by dermatologists than is treatment by radium in certain forms of tuberculosis of the skin notably lupus vulgaris, but Mr Pinch finds that small isolated patches which have proved resistant to other methods often respond well to radium. A bibliography concludes the handbook, which is published with the authority of the Committee of the Radium Institute, and will be supplied free to any medical man on demand.

DR. H H DALE has been selected as a Crown nominee on the General Medical Council in succession to Sir Nestor Tirard

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A Congress of Tropical Medicine will take place in Cairo from Dec 15th to 24th, and there will be found on p 952 an account of the preliminary organisation The Congress will deal with subjects ranging from diseases of temperate countries to those of a particularly tropical nature, and the sections include the whole range of medicine, surgery, and veterinary surgery There will be an exhibition displaying the technical applications of art and science to the various branches of medicine Conditions under which facilities of travel and reduction of fares are available can be obtained from Dr Zeitoun, 32, rue Gay Lussac, Paris, and Dr J Khouri, 4, rue de France, Alexandria The titles of communications intended to form parts of the sectional conferences must reach Dr Zeitoun, with resumés before Oct 1st

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THE lecture on May 5th in the course on Pathological Research in its Relation to Medicine being held at St Mary's Hospital, will be delivered by Dr Carl Prausnitz professor of hygiene in the University of Breslau The subject is Experimental Researches on the Nature of the Bacteriophage Prof Prausnitz has convinced himself that the bacteriophages are really living organisms preying on bacteria, and will set out the evidence which has led him to this conclusion The lecture will be delivered at 5 P M in English by Prof Prausnitz, who was educated in this country The lectures in this course are open to all members of the medical profession and to medical students without fee

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[1] Indian Medical Journal October, 1926

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CCXXI.—TREATMENT OF HAY-FEVER.

HAY-FEVER, as is well known, is a paroxysmal rhinorrhœa caused by a sensitiveness of the patient to grass pollen This pollen affects the hay-fever patient in the eyes and mucous membrane of the nose and throat because only in these situations can pollen get into contact with his circulating blood. Grass pollen plus the serum of a hay-fever subject makes a poison-mixture for man, causing serous exudations and œdematous swellings in whatever tissue it penetrates, hence the symptoms of hay-fever The pollen cross-fertilising the grasses is air- not insect-borne, it will travel many miles on light summer breezes and much further on a strong wind. In such a grassy land as England it is difficult to escape from the pollen cloud which covers the country from about May 20th until July 15th These dates vary a little according to the weather and become slightly later as one travels northward towards Scotland, but the commencement and finish of the pollen varies less than one would expect because vegetative processes depend more upon daylight than upon temperature, and with the pollen cloud the hay-fever season begins and ends

The specific diagnosis—i e, that the paroxysmal rhinorrhœa is caused by grass pollen—may be made in two ways —

1 The rhinorrhœa must coincide with the pollen cloud If the symptoms begin much before May 20th or last much after mid-July, then either the case is not one of hay-fever at all or there is some other complicating factor which must be detected if successful treatment is to be given

2 The disease can be produced artificially, but only in a hay-fever subject, by bringing a minute quantity of the pollen into contact with the sufferer's plasma This can be done quite easily in the eyes, nose, or throat, or, indeed, any mucous membrane, but as a diagnostic test it is better to scratch down through the hard dry epidermis, say of the forearm or of the leg, and to place either pollen, or better still, an extract from pollen, on the abraded surface Nothing will happen in a normal person, but the hay-fever patient will show within a few minutes a weal at and around the area of abrasion, and surrounding the weal there will be an erythematous blush This constitutes the well-known skin reaction for hay-fever It can be produced at any time of the year so long as a supply of grass pollen is available

It follows from what has been said in the first paragraph that the serum of a hay-fever patient, when mixed with a little grass pollen, can be tried out as an urticarial mixture by injecting it into the skin of any normal man

Treatment may be prophylactic or therapeutic Prophylactic treatment consists (1) in avoidance of the pollen, or (2) in desensitising to grass pollen by inoculation

Avoidance of Pollen

The pollen grains are of considerable size, something like 20 μ it is therefore possible—though seldom practicable—to filter the atmosphere of any room by arrangements less elaborate than those used in Prof Storm van Leeuwen's "asthma chambers" in Leyden; cotton-wool is a sufficient filter Even when no special precautions are taken, a quiet dust-free room, with windows closed, gives comparative freedom from pollen The well-to-do sufferer can fly the country during the summer months but it will need a good stretch of salt water to give absolute safety if the wind is blowing strongly off shore

The amount of pollen and therefore the intensity of symptoms, will be mitigated by (*a*) distance from a hay field, (*b*) any considerable altitude, (*c*) dull or showery weather, and per contra bright sunny weather, hay fields, river valleys, and travelling by railway or motor will increase the symptoms by increasing the pollen

On special occasions—e g, during a motor run in the country—the danger points can be protected (1) the eyes by closely fitting goggles, (2) the nose by tufts of cotton-wool or small linen filters in the nostrils (both of these devices are very irksome), (3) the throat by strict nose-breathing

Whatever the patient may try it is difficult for him to avoid the pollen and yet retain the common amenities of life.

Prophylactic Desensitisation (Leisurely)

(*a*) Prophylactic desensitisation can be made by subcutaneous injections of a grass pollen vaccine The method which has been used since 1910 is to give weekly injections, commencing in March if possible, and continuing right up to the commencement of hay-fever when they must be discontinued or if necessary replaced by therapeutic (smaller) doses For the purpose of measuring doses of pollen vaccine one "unit" is taken as equal to the amount of extract which can be obtained from one-millionth of a gramme *Phleum pratense* pollen It is as well to begin the prophylactic course with some rather small dose, say from 10 to 60 units of pollen, according to the intensity of the hay-fever in previous years or judging by the skin reaction From this amount the dose can be quickly increased at the weekly reinoculations till something between 200 units in the more sensitive cases and 500 units in the less sensitive is being given regularly. If after any of these inoculations there is a reaction in the patient—either pain at the site of inoculation, or still more important, a general urticaria, angioneurotic œdema, or asthma, then the dose is too large or has been increased too rapidly In either event it is better to go back to a smaller dose, the optimum inoculation being a little less than that which causes a reaction With reasonable care seriously unpleasant reactions are very rare and can be counteracted by subcutaneous injections of adrenalin—say 0 2 to 0 3 c cm of the 1/1000 solution If a reaction is in doubt it is better to continue with the same dose till the doubt is settled

Prophylactic Desensitisation (Intensive)

(*b*) In recent years an intensive course of prophylaxis has been in use, following the plan which has been so successful in dealing with other sensitisations —e g, horse asthma In this intensive course the injections are made every day or as frequently as is practicable and the dose is increased as rapidly as is compatible with the absence of reactions This may in the end prove to be the more effective method because it more closely follows the daily needs and idiosyncrasies of the patient, and because it need not be started so early in the season On the other hand, it makes more demands on the time of the patient and certainly more on the judgment of the inoculator

Commencing with a safe dose—say from 10 units for the very sensitive to 50 units for the only slightly sensitive patient—the dose is increased by 50 per cent, or even 100 per cent at first and then by a less percentage as it gets larger or a general reaction becomes more feared A pronounced reaction can be counteracted by an injection of adrenalin and is followed by a much reduced dose

As an illustration of how the intensive course is likely to run, here is a hypothetical list of pollen injections The patient is supposed to be very sensitive therefore the initial dose is very small One or two of the injections are supposed to have been overbold and the consequent reactions will be seen to have affected the succeeding doses For a less sensitive person the initial dose might have been larger the increase of doses perhaps more bold, the final doses considerably stronger and, if necessary the course might have been continued longer May 1st is a reasonable date for the commencement of an intensive course

May 1st 10 units, May 2nd: 20, May 3rd 30; May 4th: 45, May 5th 60, May 6th: 90 (strongish reaction, 0·25 c.cm. of adrenalin 1/1000), May 7th: 50; May 8th. 70; May 9th 100, May 10th: 140; May 11th. 200 (slight reaction), May 12th 200 (very doubtful reaction), May 13th 200; May 14th 250; May 15th 320; May 16th: 400; May 17th. 550, May 18th. 700, May 19th: 850 (doubtful reaction), May 20th 900, May 21st. 1100, May 22nd: 1300; May 23rd: 1500 units. Here a spell of fine weather is supposed to have started the pollen cloud and so have made any further *prophylactic* treatment imprudent for this very sensitive patient.

Therapeutic Treatment

1. After the commencement of the pollen cloud specific *desensitisation may still be* practised, but as with other forms of vaccine therapy the doses must be much smaller than for *prophylaxis*, *it may be* impossible to give more than 2 to 5 units, it is seldom necessary or prudent to give more than 100 units for a dose. As in prophylaxis a "reaction" is to be deprecated. The size of dose must be estimated from (*a*) the sensitiveness of the patient as judged by his past history or from his skin reaction, (*b*) the condition of his eyes and mucous membrane at the time of inoculating, and (*c*) the reactions, if any, from past doses. The intervals between doses vary with their size from perhaps, 24 hours with the very smallest up to say, a week for the largest. This treatment has, in the writer's experience, failed dismally with some people, but with others has been so strikingly successful that they declare they will not be bothered with prophylaxis for the future.

2. Shock doses are as *applicable to hay-fever as to* any other of the asthma-urticaria group. If immunity is evolved in the business it is certainly non-specific for almost everything imaginable has been used as antigen: tuberculin, typhoid vaccine, peptone, milk, the patient's own blood reinjected intramuscularly, even sulphur emulsified in oil. The object is to cause a shock with a rigor or two, and in the *writer's opinion* the effect is by suggestion. The method is not popular and is not advocated here.

3. Polantin is an anti-pollen serum from immunised horses. Applied locally it gives temporary relief to slight symptoms, but seems unable to help the more severe cases. It is less used now than in former years.

4. Avoidance of pollen. This has been spoken of generally under *prophylaxis*. Lotions (e.g. warm normal saline) wash away pollen grains, and thick ointments protect the underlying *mucous membrane* but cannot be made to coat all the sensitive surfaces. Cauterisation substitutes cicatricial tissue for mucous membrane and in skilled hands any specially sensitive spots can be treated in this way. Carbolic partly kills and partly anæsthetises the mucous membrane.

5. Anæsthetics will temporarily deaden the intolerable local itching, sprays of cocaine, morphia, anæsthesin, &c., may be instanced, but no medical man need be told the difficulties, dangers, and limitations of such treatment.

6. Adrenalin, to a lesser degree pituitrin or any proprietary combination of these gland products, are in a class by themselves. They have a specific action on all the asthma-urticaria syndrome, checking the symptoms and affording *instant* though transient relief, whether injected hypodermically or applied locally. For hay-fever they can be administered as a spray of the 1/1000 adrenalin or a lotion containing a tenfold dilution *of the same*. Such applications seem to be free of bad after-effects and to lead to no "habit."

7. Suggestion treatment cannot be eliminated when dealing with any of the asthma-urticaria syndrome, least of all in hay-fever. It is well in the writer's mind that single doses of a pollen vaccine sometimes act miraculously in this way. It is more than probable that cauterisation of the nose, once so fashionable, *owes much to this* factor of suggestion. Anything associated in the patient's mind with cause or cure of hay fever will act accordingly. There seems to be no evidence that an abnormal *mentality plays* any part in producing hay fever.

For therapeusis small inoculations as described in No. 1 above are advisable combined with any palliative treatments which may help but in really serious cases strong prophylactic measures are necessary.

J. FREEMAN, M.D., B.Ch. Oxf.,
Director, Department of Clinical Bacteriology
St. Mary's Hospital.

Special Articles.

MEDICINE AND THE LAW.

Unusual Procedure in Court of Criminal Appeal

At its last sitting before the Easter vacation the Court of Criminal Appeal dealt afresh with the case of William Knighton who, as previously stated in this column, had appealed against a conviction for murder at the last Derbyshire Assizes. At the original trial the defence was insanity arising out of epilepsy. On March 21st the Court of Criminal Appeal was invited to substitute for the verdict of "guilty" a verdict of "guilty but insane." The Court declined *to do this*, and announced that, as the issue of insanity had been raised at the original trial, it would not listen to any fresh evidence of insanity but would leave that matter to be determined by the Home Secretary. Subsequently the case was reopened, the Home Secretary referring it back to the Court of Criminal Appeal under Section 19 of the Criminal Appeal Act of 1907. This unusual procedure did not amount to a re-trial of the case, but it gave the appellant a chance to produce new evidence. Section 19 of the Act says that nothing in the Act shall affect the Royal prerogative of mercy; it then proceeds to make the machinery of the Act available in two cases for the purpose of disposing of petitions for the exercise of that prerogative. The Secretary of State under the section may, upon a petition for mercy, do either of two things. First, he may refer the whole case to the Court of Criminal Appeal to be heard and determined as if it were an appeal under the Act in the ordinary way. This alternative was not possible in Knighton's case as his appeal had been before the Court of Criminal Appeal already. Secondly, the Secretary of State may refer to the Court any point on which he desires assistance. It was under this latter power that the Home Secretary acted. The appellant's new evidence—that of his sister—was produced but was not accepted by the Court; the appeal was therefore dismissed a second time. Nothing was said to disturb the practice of the Court of Criminal Appeal *in respect of its* refusal to hear any fresh evidence on appeal if that evidence relates to the defence of insanity and if the issue of insanity has been raised by the defence at the original trial. The Court of Criminal Appeal is evidently unwilling to listen to a succession of mental specialists in murder appeals; it leaves the issue of insanity to the Home Office experts. Its practice in this respect is however, open to criticism in that it discriminates against the reception in court of a particular kind of evidence—namely evidence of insanity—and thus leaves the appellant to take his chance before a departmental rather than a judicial tribunal.

Law Reports and Recent Restrictions

Knighton's case illustrated the recent restriction upon the publication of law reports. In the course of her statement, the appellant's sister gave certain evidence of a sexual character. The *Times*, in its report, remarked that part of this statement appeared to be within the intention of the recently passed Judicial Proceedings (Regulation of Reports) Act, this part was therefore excluded from the report. It may seem strange that a law report in the *Times* should be affected by the recent Act, seeing that the Act has a saving clause in favour of bona fide law reports and seeing that the *Times* reports are all written by barristers and are accepted in all English courts as of full and proper legal authority. But the Act is so worded as to protect only two classes of law reports: one class *includes* any publication of a technical character bona fide intended for circulation among members *of the* legal or medical professions, the other class includes any matter in a separate volume or part of any bona fide series of law reports which does not form part of any other publication and which consists solely of reports of proceedings in courts of law Thus the law reports in the columns of a daily newspaper, however carefully, authoritatively, and unobjectionably prepared and printed, obtain no protection The omission was not a serious matter in the case under discussion, since the Court found the evidence unworthy of belief, but cases may arise where such omissions may be unfair to one of the parties as well as destructive of the value of the report of the proceedings Admittedly the Act was imperfectly drafted It contains, for instance, a list of the sole particulars which may be published in reporting a divorce case The names of the parties and witnesses may be reported but not, apparently, the names of judge, counsel, or solicitors; the apparent omission of the judge's name is the more remarkable since his summing-up may be given in full

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.

Over-prescribing under the Insurance Acts

WHERE the fund is limited every reasonable care must be taken to get full value for the money spent This is all that the "checking bureau" means It has worked in Scotland with much success from an early stage in the organisation of National Health Insurance But there has been, from time to time, much heart-burning It is not an agreeable duty for a practitioner to sit in judgment on his fellow practitioner's prescriptions, and I have never heard that any local panel committee enjoyed the job Yet there is no doubt whatever that the general effect of the checking system and the frequent inquiries by the doctors and officials concerned in the administration of medical benefit has been to improve the level of prescribing Probably over-prescribing—which simply means the use of expensive drugs when equally good but cheaper drugs are available—is largely due to defective teaching It must be embarrassing when a professor charged with the scrutiny of prescriptions finds that some of his own favourite prescriptions are among those pilloried as "excessive" by the checking bureau But the explanation is simple Whilst the expense of a drug bears no relation to its therapeutic effect, nevertheless, if "panel" work is an integral part of our domiciliary medical service, the question of expense is very relevant to practice Recently efforts have been made to bring before the medical profession the methods of avoiding expense by selection of drugs, and by careful attention to quantities dispensed, but obviously there is a recurrent irritation among the insurance practitioners It is reported that appeals "against fines amounting to £370 are to be made by eight of 13 Glasgow panel doctors who were surcharged following allegations of over-prescribing" It is sometimes said that insurance patients get one quality of drugs and private patients another, no such distinction is involved in any regulations under the Insurance Acts Whether the machinery for investigating so-called over-prescribing is the best for its purpose is another question The original intention was to enable the medical men themselves to act as checkers of each other's prescribing

Nursing at a Maternity Hospital.

Although an amalgamation of the Simpson Memorial with the Royal Infirmary has been arranged, the new accommodation cannot be ready for some seven years Meanwhile the work must be carried on and there is an acute financial difficulty, the main immediate cause of which is a change in the period of training for midwives This has caused a marked falling off in the supply of pupil nurses, and in order to maintain the nursing staff even at a minimum standard it has become necessary to offer free training to pupil nurses who have had their general training Hitherto pupil nurses have paid fees and the giving of free training to the majority of its pupils will mean an actual and immediate loss to the Edinburgh Maternity Hospital of £2000

Prof George Robertson, President of the Royal College of Physicians of Edinburgh, at the recent meeting of the hospital dealt with some fundamental points of hospital administration Everyone, he said, would approve of the directors' decision to give free training to all pupil nurses who had already had their general training He wished to bring home to the public the fact that the great voluntary hospitals did not pay probationer nurses adequately for the services they rendered It was true that they were being trained, but they were also working hard all day and all night long to keep the hospital running The whole machinery would stop if the probationer nurse did not work, and for those services she was entitled to payment, and to more adequate payment than she got at present

Prof Robertson's speech has aroused great interest

The Aberdeen Royal Infirmary

The Aberdeen Joint Hospitals Scheme has advanced another stage Last week, at a meeting presided over by the Lord Provost, a motion was carried unanimously authorising the board of directors of the Royal Infirmary to acquire forthwith the part of the Forresterhill site allocated under the scheme and to take all necessary steps towards the erection of a new infirmary upon it The Lord Provost said that they were appealing for the sum of £400,000, and already he had received before the appeal had been issued £212,000. He had gone into the cost of the infirmary part of the scheme with Mr William Kelly, who assured him he would be able to carry out the work at a cost of about £500 per bed, fully equipped, and that would mean that the total cost of the infirmary section would be £257,000

Mr Kelly was the architect who, 36 or 37 years ago, planned the expansions of the present Royal Infirmary He is known as one of the most distinguished of Scottish architects, and it is recognised that the people of Aberdeen reach their objectives without wasteful expenditure, but I cannot help thinking that £500 a bed is a very sanguine estimate in view of experiences elsewhere, even allowing for the fact that the conditions as to site are exceptional

VIENNA

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THE medical teaching staff of Vienna University has lost one of its most esteemed members in Prof Michael Grossmann, who has died at the age of 78 Professor for diseases of the throat and nose, and one of the leading specialists in his time, he was at first a surgeon, being assistant to the famous Billroth, and later to Schrotter who in the 'eighties made his clinic famous for the development of laryngology Here Dr Grossmann investigated a large series of pathological conditions and published reports and papers on emphysema, on blood pressure in the lungs, on "nasal asthma," and on the laryngeal nervous system. further, he was active in organising the medical service on railways, for which he wrote a very instructive book, since translated into many European languages He withdrew from public life some eight years ago

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Liver-rot is not a common disease among the livestock of this country, but is now prevalent in the eastern provinces of the Republic It is caused by the liver-fluke (*Distomum hepaticum* or *Fasciola hepatica*) which is about one inch long, a quarter of an inch broad, and has two "mouths," the second one on the ventral side of the body, and both acting as suction organs The infection of the cattle takes

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Malaria

Malaria has been chiefly tackled in the United States hitherto by drainage and oiling operations, but during 1926 successful experiments were carried out in Virginia by the use of Paris green dusted from an airplane, and it is thought that this method of destroying the malaria mosquito may be applied to large areas at a reasonable cost. Another scheme in progress is the study of the habits of the salt-marsh mosquitoes with a view to reclaiming millions of acres in the South Atlantic and Gulf States at present rendered uninhabitable by hordes of these biting insects which, as far as is known, do not carry specific diseases.

Other Infections

An organised scheme to fill in the gaps in our knowledge as to how tuberculosis is spread, the perfection of scarlet fever antitoxin, the researches into leprosy in Louisiana, Hawaii, and the Philippine Islands, and the investigation of a mild form of typhus fever known as "Brill's disease," endemic in New York and some eastern cities, are other matters dealt with in these articles.

Cancer, goitre, industrial diseases, social diseases, nutritional diseases (especially pellagra, which is quite common in the Southern States), and milk-borne diseases are all being studied. An endeavour is being made to establish a uniform standard for clean milk production throughout all the States.

Child hygiene, rivers pollution, rural sanitation, statistics, and health administration are other matters receiving attention, and the magnitude of this part of the problem is suggested by some figures given—e.g., between 85 and 90 per cent. of the sewage of all the cities in the United States is discharged without treatment into the most convenient stream; 84 per cent. of the rural population are still without the protection afforded by a local full-time health service; 40 per cent. of the 100 largest cities have part-time health officers, and "in nearly 30 per cent. appointment of personnel is still disturbed by political changes in the city administration"; only 79 of the 100 largest cities were in the birth registration area in 1924.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED APRIL 16TH, 1927

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 348 (last week 391); scarlet fever, 1169; diphtheria, 709; enteric fever, 33; *pneumonia*, 993; puerperal fever, 33; puerperal pyrexia, 84; cerebro-spinal fever, 16; acute poliomyelitis, 1; acute *polio-encephalitis*, 3; encephalitis lethargica, 33; continued fever, 1; dysentery, 6; ophthalmia neonatorum, 114. No case of cholera, plague, or typhus fever was notified during the week.

The *cases* of small-pox were notified from the counties of Derby, 6; Durham, 172; Lancaster, 1; Northumberland, 18; Nottingham, 8; Yorks, North Riding, 2; West Riding, 94—all north of the Midlands; and *Monmouth*, 47. Since this return was made up 6 cases have been reported from the County of Middlesex—2 of these from a laundry in Hendon and 4 from a single household in Golders Green.

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox, 3 (1) from enteric fever, 89 (2) from measles, 6 (3) *from scarlet* fever, 65 (10) from whooping-cough, 30 (7) from diphtheria, 39 (9) from diarrhœa and enteritis under two years, and 96 (12) from influenza. The figures in parentheses are those for London itself.

Correspondence.

"Audi alteram partem."

CREAM IN INFANT FEEDING.

To the Editor of THE LANCET.

SIR,—Dr. Donald Paterson, in his article under this title in your issue of April 23rd, refers to diets with a high fat content which are often given to infants. He points out that quite a number of children are unable to manage a high fat-content in their feed, and estimates these as being 1 in 10 of the population. I think he might have gone further than this and referred to the number of children who have a difficulty in the digestion or absorption of fat, even when present in the diet in inadequate amount.

This fat intolerance is sometimes present in the breast-fed child, although it must be remembered that the fat in breast milk is occasionally found to be in excess of the normal, in which case the trouble is really due to too rich a milk. In the case of the artificially fed child the tolerance, or rather the intolerance, of fat is a very common difficulty and the child's digestive system has to be educated to deal with fats by giving them in small, gradually increasing quantities, and working slowly up to the maximum of about 3.5 per cent. in milk mixtures. In addition care should be taken to supply the most valuable kind of fat both from the point of view of its vitamin and nutritional value and also to give these fats in a form in which they can be most readily assimilated.

Dr. Paterson refers to certain synthetic creams, among which he names New Zealand cream, and he makes the observation "that these creams are of great value to the infant apart from their vitamin-content is most debatable." He advocates in place of such synthetic creams the use either of a cod-liver oil emulsion or "a few drops of plain cod-liver oil three times a day immediately before feeds." In my experience, plain cod-liver oil is not so easily tolerated by the child who has a difficulty with fat digestion as an emulsified fat, and for this reason there is a distinct advantage in using a fat emulsion rather than the plain oil. New Zealand cream made under the direction of Sir F. Truby King is especially designed to provide the right kind of fat in the most easily digestible form; it contains 50 per cent. fat of which two-thirds is animal oil including fresh New Zealand butter and cod-liver oil, and one-third vegetable oil, mainly pea-nut; it also contains 40 per cent. sugar, mainly dextrose and a little lactose. The presence of the vegetable oil renders the absorption of the animal oil easier, and of this, I think, there is no doubt. I have used New Zealand cream in such a very large number of cases that I am quite convinced of its value, but I should like to take this opportunity to point out that if this cream is used it is of the utmost importance to give only a sufficient quantity to supply the correct maximum of fat in the diet, and where a child has only been accustomed to a low fat, or in the case of a fat intolerance, it is essential to begin with a small quantity and gradually work up to the full amount required for the 24 hours' supply. I am aware that children have been upset by the incorrect use of this cream and so faults have been unjustly found with it. Recipes for the proper use of it in milk mixtures may be obtained from the Mothercraft Training Society.

I quite agree that it is a common mistake to keep children too long on an exclusive milk diet, and that milk is often given to the older child in too large quantities to the exclusion of the solids which it requires. But does Dr. Paterson really believe that there is quite sufficient fat or cream in "an ordinary diluted cow's milk feed" without any further addition? I should like to know what he means by "an ordinary diluted cow's milk feed." He contradicts himself in his next sentence when he says that every infant, breast or bottle-fed, should be given

Papworth The two are not identical. The French village deals with tuberculous patients of the middle class, its cottages permitting grouping according to occupation or mental and intellectual preference, whereas Papworth provides for patients of rather lower social standing and does much to solve their economic difficulties No French sanatorium for tuberculosis is really comparable to Papworth The Passy Institution is more closely similar to the American cottage sanatorium at Saranac Lake

The Paris Birth-rate

The latest municipal bulletin shows that the number of births in Paris has remained stationary between 1922 and 1926, although the population has considerably increased From 19 to 21 per cent of the infants born in the city are placed with nurses and artificially reared Stillbirths are diminishing here as indeed throughout France, but mortality during the first few months of life remains high, partly because of the transference of infants from mother to nurse

The centenary of Villemin will be celebrated in October He was professor at the Val-de-Grâce Hospital in Paris and was the first to prove that tuberculosis could be conveyed by inoculation, thus laying a foundation for the work of Koch

Yacöel and Boyer recently showed at the Academie de Médecine a case of chronic obliterative arteritis cured by the use of insulin. This condition so often leads to gangrene of the limbs that it is encouraging to hear of numerous successes attending treatment with insulin as given under Prof Vaquez at the Hôpital de la Pitié It is suggested that the disease has its origin, not in microbic infection as has sometimes been believed, but in a trophic disturbance related to abnormal function of the endocrine glands —notably of the pancreas and suprarenals

Dr Paul Marie Léon Regnard, who died recently at the age of 76, was a member of the Academies of Medicine and Agriculture, and had made experimental investigations into the physiology of respiration His many writings included works on epidemic affections of the mind, on life in the sea, on cure by altitude, and on rescue work in mines He was also the author of numerous papers on the anatomy, physiology, and chemistry of agriculture

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WINDSOR HOSPITAL EXTENSION—The King last week opened a new wing, named after him, of the King Edward VII Hospital at Windsor There are now 50 beds for men, 40 for women, 20 for children, and 15 private wards for patients of small means It will still be impossible to meet the demands of a wide area, and it is therefore intended at an early date to provide a nurses' annexe to release rooms in the main buildings, these rooms will be converted into additional private wards and will make it possible to increase the number of beds for women and children

THE LATE DR. W T BLACKLEDGE—The death took place on April 20th of Dr William Thomas Blackledge, M B E, at his house in Liverpool where he had practised in the Newsham Park district since 1893 He was the second son of the late William Blackledge, of Chorley, and studied at Edinburgh at the University and extra-mural school, graduating in 1893, having previously taken the L R C P & S Edin in 1888 At the University he gained the Junior Mackenzie Bursary in 1885, and the Senior Bursary a year later He also acted as a prosector in the anatomical department under Sir William Turner For over ten years he was assistant surgeon to the Liverpool Police Force and for many years also honorary assistant surgeon to the Liverpool Hospital for Cancer and Skin Diseases An able and enthusiastic Volunteer and Territorial officer he joined the 3rd West Lancashire Brigade, R F A, as surgeon-lieutenant in 1899 In 1911, on the formation of the Territorial Force he took a combatant commission, and in 1913 was transferred to the R A M C, becoming second in command of the 2nd West Lancashire Field Ambulance, with which he was serving at the outbreak of the war During the war he was in charge of military hospitals in Kent, and subsequently commanded the 2/1st West Lancashire Field Ambulance, holding the rank of lieutenant-colonel Later he was president of the Officers' Medical Board in Liverpool

Public Health Services.

A POPULAR SKETCH OF THE AMERICAN PUBLIC HEALTH SERVICES.

TWO recent issues (Feb 4th and 11th, 1927) of the Public Health Reports, issued by the U S Public Health Service, have been largely given up to an account of the many activities of this service written in a popular style which will appeal to a much wider circle of readers than the body of workers for which it is primarily intended The service enlists the aid of medical and other specialists of every description, and its staff includes bacteriologists, zoologists, pharmacologists, and chemists Its functions are mainly research and the setting of a high standard for the inspiration of the various States and local government authorities Every health problem comes within its purview and the description of the investigation of diseases is a tale of high endeavour, not unmixed with martyrdom

Rocky Mountain Spotted Fever

This disease, which attacks the shepherds of Idaho and Montana, had a case-fatality of 80 to 90 per cent in Bitterroot Valley During the investigation a doctor and two assistants working at the Montana laboratory acquired the disease and died within ten days of infection The disease occurs among small rodents and is passed on to other rodents and man by ticks The rodents are not much incommoded by the disease, but are capable of infecting the ticks, which feed on them, for about ten days A vaccine has been prepared from an emulsion of infected ticks and found efficacious for animals In 1924 Dr R. R Spencer took the first dose administered to a human being. Subsequent results indicate that the vaccine is an effective protection to the shepherds who have been vaccinated Among the laboratory workers, before the vaccine was used, there were five infections, all fatal Since the use of the vaccination there have only been four very mild cases which included a man over 60—the first person of that age to recover after infection with the "Bitterroot" strain

Tularæmia

Tularæmia has been known in Utah and adjacent States since 1910 as "deer-fly fever" It begins with an ulcer and feverish symptoms resembling typhoid fever and is apt to cause long disablement of the farmers in the busiest time of the summer It may be fatal, although most patients recover Six workers at the main laboratory at Washington and six more at the Montana laboratory contracted the disease but fortunately all 12 recovered. In 1910 Dr. G W McCoy, of the service, discovered a "plague-like disease of rodents" among the ground squirrels of Tulare County, California This has now been identified with the Utah disease, which is found to be transmitted to man from wild rabbits by flies and ticks One attack gives immunity and the effort to discover a vaccine is being prosecuted by laboratory workers protected in this manner Infected ticks pass the infection through their eggs to the next generation of ticks An infected rabbit is harmless as food after cooking It is suggested that laboratory workers and persons who dress rabbits can protect themselves by wearing rubber gloves Tularæmia has now been recognised in 28 of the States and identified as a disease known for several years in Japan as "Ohara's disease"

Undulant Fever

Malta fever was unknown in the United States until 1905 In 1922 an outbreak of 35 cases in Arizona was traced to goat's milk and in the same year a case in Johns Hopkins Hospital was traced to cow's milk It reads like a romance how the twins *Micrococcus melitensis* (foster father Bruce, Britain) and *Bacillus*

THE RESULT OF AN APPEAL

To the Editor of THE LANCET.

SIR,—My appeal on behalf of a doctor, published in your issue of Dec 4th last, brought in a sum of £114 19*s* 6*d* This is additional to the subscription with which the list was opened Will you and the 42 subscribers please accept my thanks

I am Sir. yours faithfully

Harley-street, W , April 23rd, 1927 HILDRED CARLILL

TESTS FOR DRUNKENNESS.

To the Editor of THE LANCET

SIR,—May I trespass further on your space to make a few observations on Sir William Willcox's letter In the first place I should like to ask for the source of the evidence which proved conclusively to the Committee "that in the performance of complex occupational acts such as the driving of a motor-car an experienced driver might be little affected by relatively large amounts of alcohol since his long experience of driving has caused his control of the car to become almost automatic" More particularly I wish to know why the Committee conclude that the judgment of the alcoholic is little impaired, for this matters just as much as having complete control of the levers of the car A friend of mine accustomed to alcohol in a concentrated form (he has got to the stage when he prefers his whisky neat) tersely and candidly states the difficulty when he says that he gets home more quickly in his car after a few whiskies at his club than when the drinks are omitted till he gets home Then as to Sir William Willcox's observations on the legal objections to the test—I have never advocated taking blood samples, in fact, in the paper I stated that there are obvious objections to the direct method of obtaining the blood concentrations by taking blood samples, &c If the accused person is unwilling to pass a urine sample I think this should be used in evidence against him.

It is refreshing to learn that Sir William Willcox admits the legal value of the chemical proof of absence of alcohol from the urine of a person arrested for drunkenness But why restrict the value to a negative result only? Even if it be not admitted that there is a correlation between concentration of alcohol in the urine and toxic symptoms produced (I think that those who will actually test this out for themselves will agree with me however, that these factors are related) surely it will be of service to the presiding magistrates to be able to state from a quantitative analysis of the urine that the accused must have taken at least so much alcohol? A case in point came to my notice some months ago; a motorist, after zigzagging on the wrong side of the road, grazing a tram-car and knocking a cyclist down then took a tram standard head on, with the result that the impact flung him violently against the steering wheel and he fractured some ribs The injury caused a delay of some weeks in the trial—he was arrested for being drunk in charge of a motor-car. The police surgeon who saw him three-quarters of an hour after the accident considered him not drunk at that time His urine was sent me for analysis It contained 268 mg alcohol per 100 c cm This man must have drunk at least the equivalent of the alcohol in six large whiskies (i e 7½ oz whisky 30 U P) to produce this concentration and yet the accused on oath stated he had had only one gin to drink which will yield a maximum concentration of alcohol in the urine of not more than 50 mg The man was simply fined for negligent driving!

The last two paragraphs of Sir William Willcox s letter seem to me to be a quibble The Committee (page 54 of this report) considering the tests for establishing the fact that an individual is under the influence of alcohol place first on the list the establishing of the fact as to whether or not the person has recently consumed alcohol The whole of the daily press read the report in the sense I indicated in my letter. But whether the test of smelling alcohol in the breath can or cannot be regarded as an essential test for alcoholic intoxication, I repeat my charge that the test is unsound and utterly unscientific

Sir William Willcox has shown the value of a *positive* quantitative estimation of arsenic in the urine in bringing offenders against society to book May I in conclusion appeal to him as Advisor to the Home Office to give the urine estimation a fair trial with all the material that is available in the Metropolitan area? I shall be very glad to pass on my apparatus for this purpose as alas! I have no time now for further investigation along these lines

I am, Sir yours faithfully,

Croydon, April 26th, 1927. H. W SOUTHGATE

COMPENSATION FOR A DAMAGED HAND.

To the Editor of THE LANCET

SIR,—A recent case was heard at the Shoreditch County Court arising out of an accident in which a youth lost the last joint of his right middle finger. £50 was paid into court by way of compensation, but the claimant through his mother claimed £100 Judge Cluer, in rejecting the application of the employer. remarked to the mother that "if you had lost the top of the right middle finger you would have wanted £200 and so would I" The Workmen's Compensation Act has been in force just on 20 years and it still remains without a schedule of fixed amounts for definite injuries Assessments are still arrived at by a more or less rule of thumb We have the schedule of the Ministry of Pensions with which a large number of medical men have become conversant, but it is of no practical use in dealing with claims under the Workmen's Compensation Act. Under this schedule the right middle finger is assessed at £40 whilst two of its joints are worth £30 and one joint £25. Loss of the right middle finger, together with either the index- or ring-finger entitles one to a life pension of 20 per cent which at present rates means 8s. a week

I am, Sir, yours faithfully.

Old Broad-street, E C , April 25th J. J SCANLAN

LOOKING BACK.

To the Editor of THE LANCET

SIR,—I enclose a local paper; a paragraph on p 3, col. 3, has led me to write.

My father, who died in 1888, took his L.R.C S. in 1828 when 19 years of age, there being no restriction as to age then I took the same qualification in 1867. just after completing my twenty-first year: so this is a period of 99 years of practice conducted by father and son.

Looking back many things strike me, noticeably the great decrease in the rural population of this district, the very small birth-rate (10 1 instead of 30), the great diminution of infectious disease treated at home, and the increase in the number of doctors Once upon a time the nearest hospital was 17 miles distant, and there were little or no facilities in the way of nursing for the public Practices were not sold and there were no locum tenents, and an indoor assistant was considered well off with £40 a year.

Every practitioner dressed in a surtout and a tall silk hat. He visited his patients within the town postal delivery by walking and the country patients on the back of a horse or in a gig or by a combination of the local railway (when it came). and walking. In my opinion a good saddle horse was the best way of conducting country work. On more than one occasion I have ridden 50 miles. returning home within eight hours I learned cycling when 50 years of age, thinking to save money, and I have even used a motor-cycle, and now on occasions hire a car.

I am Sir, yours faithfully,

Crieff. April 18th 1927 JAMES GAIRDNER

** The *Strathearn Herald*, which our correspondent forwards announces Dr Gairdner s increase of salary by the Crieff Parish Council, in appreciation of his long service as medical officer of health suitable mention of which is also made on the minutes of the council —ED L cod-liver oil Is it necessary or even advisable to give cod-liver oil to a breast-fed child unless it is proved that the mother's milk is deficient in fat, or that her diet is lacking in animal fat ? Would it not be better even in these cases—which must be rare—to give the cod-liver oil to the mother rather than to the child ?

As to whether fat is needed rather for its vitamin-content than for its food value is a question which we must look to the physiologists to determine, but until we are better informed surely we must believe that it is of value from both these points of view What would be the effect on nutrition and growth of a fat-free diet plus an extract of the fat-soluble vitamins if such an extract could be prepared ?

I am, Sir, yours faithfully

Reginald C Jewesbury

Wimpole street, W , April 25th, 1927

ANTERIOR SUBLUXATION OF THE ATLAS

To the Editor of The Lancet

Sir,—Mr Alwyn Smith and Mr Lambert Rogers seem to me to be entirely right in their criticism of Prof Oppel's interesting case I have assembled a considerable amount of material on this and allied lesions of the upper cervical vertebræ which I hope to have ready for publication shortly It is evident that the dislocation is a sign of some other injury This may seem an obvious statement to make, since dislocations in general are due to violence which has ruptured the ligaments holding the bones together, and usually continued long enough to displace the bones In this particular region immediate recoil into normal position may take place, and dislocation occur later, even intermittently, by means of the forces of gravity or muscular action In the case of the occipito-atlanto-axial component the dislocation is the end-result usually of a fracture of the odontoid process or of rupture of the transverse ligament Prof Oppel correctly remarks that the former—i e , odontoid fracture—is the commoner, much the commoner In his case we may assume that the odontoid has not broken through at the neck. There is, however, another horizontal fracture of the axis (I shall refer to the distinction between horizontal and vertical fractures of the axis in a forthcoming paper) which is more difficult to diagnose, and therefore escapes notice more often even than the more common varieties I may remark in parenthesis that the most potent reason for failure to diagnose them is implicit in a remark of Prof Oppel's " And what surgeon does not know that the history of anterior subluxations of the atlas is one of sudden death caused by trauma ? The number of patients who have not succumbed to such a lesion may be counted on the fingers " With the greatest respect to Prof Oppel, who has done much for the cause of surgery, I must strongly disagree with this statement, which does, however, embody the general impression of our profession towards injuries Medical men feel that any case of their own cannot possibly have an injury involving atlas or axis because the man is still alive ! Hence a number of cases are missed Of course, if a complete luxation occurs death must result, but this is a great rarity. A subluxation, such as Prof Oppel describes, is much the commoner, and even when untreated these do not as a rule become complete luxations unless the cause of the displacement is disease in the bones and ligaments (i e , pathological dislocations).

The second variety of axis fracture to which I commenced to refer is an oblique fracture downwards and forwards through the body of the bone, and this may liberate the odontoid and allow an anterior subluxation to occur In these cases the neck of the odontoid resists fracture, but a considerable fragment of the axis comes away with it The antero-posterior view through the mouth usually fails to reveal a clear fracture line and all that one sees distinctly is that the odontoid is intact Even in the lateral view the fracture may be difficult to make out The presence of a bone fragment in front of the axis suggests that this may have been the pathology of Prof Oppel's case To be sure the fragment may have been displaced downwards at the operation, and may even be adventitious, as it was not seen in the first photograph

I do not think that Prof Oppel is justified in his diagnosis of fracture of the anterior arch of the atlas Judging from the tracing the appearance of the anterior arch is not abnormal I doubt whether a fracture of the anterior atlantal arch will often be diagnosed during life, for it is difficult to see clearly except in profile There is certainly no reason why it should be dangerous Most of the few published " fractures " of the anterior atlantal arch are developmental defects I have commented (*Brit Jour Surg* 1920) in a paper on Atlas Fractures on a very beautiful example published by Sybenga (1919).

I agree with Mr Alwyn Smith and Mr Rogers that laminectomy would be the better operation, perhaps combined with removal of the posterior margin of the foramen magnum, if the patient had pressure signs and the displacement had occurred for so long that one was afraid of manipulation. The ideal operation, however, is unquestionably replacement and fixation, the latter not by means of an Albee graft, as Prof. Oppel tentatively suggests. A successful graft must lie in an osteogenetic medium, and although it might " take " below in the rongeured and split lower cervical spinous processes, I cannot imagine its uniting above to the occipital bone, with its feeble powers of bone formation The alternatives lie between an arthrodesis in the atlanto-axial joints, or slinging the posterior arch of the atlas to the tunnelled spine of the axis by strong fascial grafts or slips from the tendo Achillis –much the easier procedure

I am, Sir, yours faithfully,

Manchester, April 15th, 1927 Geoffrey Jefferson

BROMSULPHALEIN

To the Editor of The Lancet

Sir,—In a recent leading article (The Lancet, Feb 19th, p 400) dealing with liver function tests and their clinical value, reference was made to an article by Dr Ernest Bulmer (*Quart Jour Med*, 1927, xx , 101) upon the bromsulphalein dye test Bulmer was unable to obtain satisfactory results with this test, and in normal individuals he obtained widely divergent results, not at all agreeing with the standards we have set Thus we have found that in normal cases after an intravenous injection of 2 to 5 mg of bromsulphalein the liver is completely able to remove the dye from the blood-within 30 minutes Bulmer, however, in his series of normals, reports retention of the dye in the blood, up to 45 per cent , 30 minutes after its injection The reliability of a test of this nature depends primarily upon a constancy of findings in normal individuals, and in view of the fact that in a large series of investigations we have never encountered a single exception to our " normal " standards, Bulmer's work deserves further criticism.

The explanation of Bulmer's results apparently lies in the drug which he used Bromsulphalein was synthesised in the laboratories of Hynson, Westcott, and Dunning, Baltimore, Md , by Dr E C White Its preparation is difficult and the technical details of its manufacture have not yet been published The dye employed by Bulmer was obtained from a local chemist, and Dr White states that it would be practically impossible to make bromsulphalein from the information at present available Bulmer was probably not using bromsulphalein, and it seems advisable to correct the erroneous impression of this test which his work conveys Numerous workers have demonstrated the superiority of the dye test (based upon its removal from the blood stream) over carbohydrate tolerance tests, and in chronic liver disease this test is often the only method which will reveal impaired function

I am, Sir, yours faithfully,

Sanford M Rosenthal

Department of Pharmacology, McGill University,
Montreal, March 31st, 1927

THE TOTAL ECLIPSE OF JUNE 29th, 1927

PROTECTION OF THE EYES

By ARNOLD LAWSON, K B E , F R C S Eng ,
SENIOR OPHTHALMIC SURGEON, MIDDLESEX HOSPITAL,
AND
ARTHUR L WHITEHEAD, F R C S Eng ,
CONSULTING OPHTHALMIC SURGEON, GENERAL INFIRMARY, LEEDS

The forthcoming eclipse of the sun brings up again the question of protecting the public from the serious risk to the eyesight which must accompany any attempt to observe the sun's disc without an efficient light filter before the eyes On previous occasions a general warning has been issued through the press, advising the wearing of dark-tinted glasses or the use of a piece of glass smoked in a lamp or candle flame The matter, however, has never received the attention it deserves, and, beyond formulating the desirability of protection, the detail as to tint, density, and elimination of particular portions of the spectrum has been left practically untouched

On this account we have been giving the matter a very careful examination, the result of which is that it will now be possible for everybody to obtain at a trifling cost a screen through which the eclipse can be observed throughout all its phases without dazzling, and with perfect comfort and safety to the eyes The question was not so easy or straightforward as might appear at first sight For the sake of clearness it is as well to enumerate the essential points which such a screen must possess

(a) In order to avoid all risk of "eclipse blindness" it is imperative to employ a screen which will cut out the powerful ultra-violet rays of the sun's beam These rays constitute a considerable portion of the sun's radiant energy Being invisible, they are useless for vision, and when intense, as they are in direct sunlight, they are very irritant to the eye

(b) A second essential is to decrease the general luminosity sufficiently to remove the insupportable glare from the sun's orb

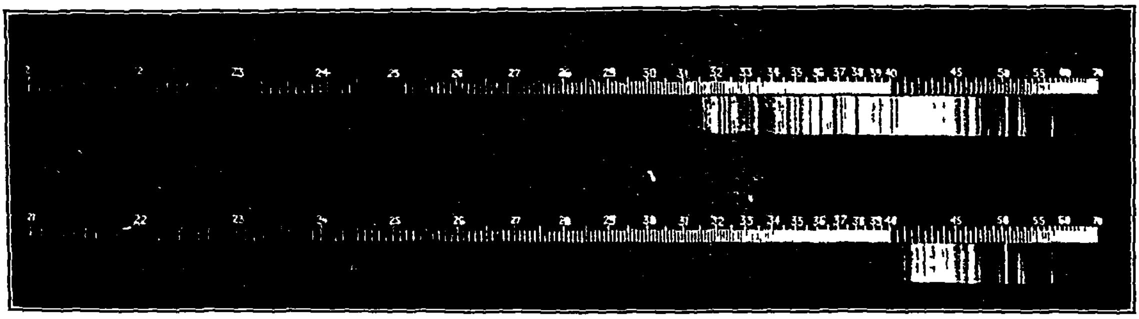
(c) These two previous desiderata must be so arranged that the observer may be able, not only to see the outline of the sun as it varies with the progress of the eclipse, but may also be enabled to view the less conspicuous phases of the eclipse in comfort

(d) The public must be made to understand that neither simple smoked glass nor fogged photographic film are safe screens even when well prepared, for in neither case are the irritant ultra-violet rays absorbed These screens do no more than reduce the intensity of the beams

(e) The screen must be put on the market at such a low cost that its purchase will come easily within the means of the working classes

We at first turned our minds to existing kinds of glass on the market with the hope of finding what we wanted Crookes's glass fulfilled the essential of cutting out ultra-violet radiation, but in other respects even the darkest shade obtainable was far from satisfactory Peacock blue seemed to be much the best glass, because it is not only as efficient as Crookes's glass with regard to absorption of ultra-violet rays, but it also entirely cuts out the red end of the spectrum, and thereby imparts a peculiar sense of coolness and comfort However, it fails again in allowing too much of the luminous radiation to come through, and further it interferes seriously with the colour scheme and would altogether mask the natural coloration of the sky and eclipsed sun. Moreover, when the essential question of cost came to be considered, both Crookes's and peacock blue glass, apart from the question of fitness for the purpose in hand, were much too expensive for production at the low cost which, as already pointed out, is absolutely essential if the mass of the general public are to be persuaded to purchase the screen.

At this juncture we approached Mr Theodore Hamblin, of the well-known firm of opticians, 15, Wigmore-street, London, W 1, who suggested calling in the advice of Dr Judd Lewis These two have worked in collaboration with the result that Dr Lewis has produced exactly what is wanted, which Mr Hamblin is prepared to put on the market at the essential low cost Briefly, Dr Lewis has evolved the idea of utilising photographic film, which is first fogged by exposure to light so as to produce a certain density, and then treated by a special method, as a result of which all the spectrum of wave-length shorter than 4000 Angstrom units is cut off (see figure) By this means a medium is obtained which reduces the luminosity of the sun to a safety point and also entirely disposes of all danger from ultra-violet radiation Simple fogging would not alter the character of the spectrum, but only reduce its intensity, which, as already pointed out, is not a sufficient safeguard if a person gazes for any length of time at the sun's orb Further, this treatment does not alter the colour of the film so that the sky and eclipsed sun are seen in their natural colour This prepared film has been registered under the name of "Eclipsia" and Mr. Hamblin has arranged to put it on the market in two forms The cheaper form will be provided in the character of a mask and sold at a shilling, which will bring it within reach of every purse, and in addition there will be a rather more elaborately contrived arrangement at a slightly increased cost for those who desire it This latter type will contain three screens of different densities—one, very dense, for viewing the sun when it is but little eclipsed; a medium density for observation when the eclipse is well advanced , and one which is nearly clear for observation when the eclipse is nearly total



Spectrograph by Dr Judd Lewis The upper figure shows the spectrum of untreated and the lower that of treated photographic film The completeness of the cut-out of the ultra-violet radiation in the lower figure is well shown

Our personal connexion with the matter is now at an end We hope that we have secured the safety of the public by initiating this investigation, and we heartily congratulate Dr Lewis on his scientific acumen and Messrs Hamblin on the interest they have displayed and the business-like manner in which they have realised and tackled the proposition Messrs Hamblin have control of the manufacture of "Eclipsia" and all inquiries with regard to this matter must be addressed to the firm We can only trust that through the medium of

Obituary.

ANDREW STANFORD MORTON, M B, F R C S Edin, F R C S Eng

Mr A S Morton, who died in retirement at Clifton on April 11th, will long be remembered by the profession at large for his invention of an ophthalmoscope which is in general use at the present time and which goes by his name But his reputation amongst those who worked with him depends rather upon his competence as a clinician and operator than on any special device or achievement

Graduating at Edinburgh in 1874, Mr Morton went south to University College, London, and later studied at Paris He became a Fellow of the Royal College of Surgeons of Edinburgh in 1877, before which time he had started ophthalmological work as house surgeon to the Royal London Ophthalmic Hospital (Moorfields) His first staff appointment was to the Royal South London Ophthalmic Hospital at Southwark, but he continued to attend Moorfields as clinical assistant, and a few years after taking the F R C S Eng in 1888 was appointed assistant surgeon there Later he became ophthalmic surgeon to the Royal Northern Hospital At Moorfields Morton's work and teaching was much appreciated To the older generation of students he was known as a thoroughly sound and dexterous operator, and his classes, at which he demonstrated (on pigs' eyes) the chief ophthalmic operations, were always popular The knowledge which he had gained under such excellent masters as Mr George Critchett and Sir William Bowman, whom he served when house surgeon at Moorfields, was well utilised In diseases of the eye, however, operative skill is not solely a matter of education, it depends largely on innate capacity, and with this capacity Mr Morton was richly endowed He was a tall, stoutly built man, but had small strong hands with beautifully tapering fingers, and the masterly way in which he wielded a Graefe's knife impressed the onlookers from all parts of the world who congregated at Moorfields Curiously enough, though his dexterity was great and his judgment sound, he never seemed to realise the advantages of modern aseptic methods and preferred always to operate, as his predecessors had done, in his everyday coat An ardent refractionist at the time when retinoscopy was first introduced, Mr Morton seized the moment to publish a short book on the corrections of errors of refraction which gave a clear account of the subject and passed through several editions He was a good draughtsman with an excellent eye for colour, and he made use of these gifts in depicting, with much patience and accuracy, diseases of the fundus of the eye as seen with the ophthalmoscope The early volumes of the Transactions of the Ophthalmological Society were much enriched by the reproduction of these paintings, the originals of which are preserved in the museum at Moorfields Hospital

Mr Morton was at one time vice-president of the Ophthalmological Society of the United Kingdom, and received for professional services the rank of Chevalier of the Crown of Italy He retired in 1920 and was 79 years of age at the time of his death

HARRY MATTHEWS, B Chir Camb

The death, at the early age of 51, of Dr Harry Matthews, of Whitehall-court, has come as a shock to a large circle of friends and patients Since August of last year his health had been failing but he continued his work cheerfully until about two months before his death Born in 1875 at Sporle, Norfolk, the youngest son of the late Thomas Matthews, of Sporle, he was educated at Grantham Grammar School (the school of Isaac Newton), St John's College, Cambridge, and St Mary's Hospital He graduated in Arts in 1897 and took the B Chir in 1900, and at Cambridge was prominent both on the football field and the river After filling house offices at his hospital, where he was house surgeon to the late Mr Edmund Owen, he joined the late Dr Boyter Johnson in practice at Whitehall-court.

During the war he obtained a temporary commission early in 1917 and was attached to the 51st Field Ambulance (17th Division), then under the command of Lieut -Colonel E L Gowlland, D S O For some months he was on duty in the trenches and in the advanced dressings stations near Gavrelle West of Monchy To quote the words of Colonel Gowlland "His unfailing cheerfulness, quiet courage, and above all his kindness and sympathy with the men under him and with his patients made him a most valuable officer, and the Field Ambulance was the poorer when he was transferred to the Headquarters' Staff of the Vth Army Corps" At the Corps' Headquarters Matthews had medical charge of the personnel of the staff, and in addition attracted to himself a large clientèle among the peasants in the various villages in which the staff was billeted. With many of these humble patients he corresponded for some time after the war

Harry Matthews was a good example of a type of general practitioner found at its best development in this country One of his old chiefs writes of him "He had a real clinical instinct born of years of patient and conscientious observation, he kept himself abreast of the developments of modern medicine, and possessed that instinct of service which led him to give his all ungrudgingly to those who placed their confidence in him To Harry Matthews all class distinctions vanished where a patient was concerned." And this was exemplified by the large and varied congregation which assembled at the memorial service held to his memory in St Martin's Church, W C He was buried at Newton-by-Castleacre, Norfolk

The Services.

ROYAL NAVAL MEDICAL SERVICE

Surg -Comdr H B Hill to *President*, Surg Lt -Comdr K A I Mackenzie to *Victory*, Surg -Lt M Brown to *Britannia* for R N Sick Quarters, Dartmouth

ROYAL ARMY MEDICAL CORPS

Maj J R P Allin to be Temp Capt. and temporarily relinquishes the rank of Maj

Capts to be Majs R B Myles, G W Rose, J T. McConkey (Prov), and R McKinlay

To be Temp Lts D J Allan and G M Cooper

ARMY RESERVE OF OFFICERS

Capt G T Baker relinquishes his commn and retains the rank of Capt

Capt R M Le H Cooper, having attained the age limit of liability to recall, ceases to belong to the Res of Off

TERRITORIAL ARMY

Lt -Col T A Hindmarsh, from Active List, to be Lt Col. Supernumerary for Service with O T C—Maj H H Woollard resigns his commn

ROYAL AIR FORCE

The undermentioned Flight Lts are promoted to the rank of Squadron Leader. T R S Thompson and R S Topham

INDIAN MEDICAL SERVICE

The King has approved the retirement of Lt.-Cols J G P. Murray and R M Carter

Capts Anant Yashwant Dabholkar, Ram Nath Khosla, and Ratenshaw Nariman Kapadia, S A McSwiney, and Huggahalli Sundra Rajan to be Majs

Capt Srish Chandra Sarkar (permitted to retain the rank of Capt), and Lt Jodh Singh Guruwara relinquish their temp commns

Kulwant Rai to be Lt.

Dr Arthur Young has been appointed pathologist to the Institute of Medical Research, Kuala Lumpur, Federated Malay States

Royal Medico-Psychological Association —The next quarterly general meeting of this association will be held on Thursday, May 19th, at the house of the British Medical Association, Tavistock-square, London, W C 1, under the Presidency of Lieut -Colonel J R Lord At 3 30 P.M Lieut.-Colonel Edwin Goodall will deliver the Eighth Maudsley Lecture, in which he will deal with Some of the Work Done to Elucidate the Pathology of Disease Falling to be Considered Under the Rubric " Insanity "

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THE LANCET the general public may be again cautioned and informed of the means that lies at hand of enjoying with perfect comfort and safety all the wonderful phenomena of the eclipse

ST THOMAS'S HOUSE.

A RESIDENTIAL CLUB FOR MEDICAL STUDENTS

A RESIDENTIAL club for the students at St Thomas's Hospital, adjoining the grounds of Lambeth Palace, was opened on Tuesday morning last by the Archbishop of Canterbury The fine building of seven storeys contains over 70 bedrooms, as well as all the accommodation necessary for the social life of the students The mantel-piece in the common-room forms the war memorial erected by past and present students of St Thomas's to the memory of their fallen brethren and was unveiled by the Archbishop at the close of the opening ceremony.

The *Archbishop*, with whom was Mrs Davidson, was received by Sir Arthur Stanley (Treasurer of the Hospital), Sir George Makins (Chairman of the War Memorial Committee), and Dr L B Maxwell (the Warden of the House) The company assembled in the common-room when Sir Arthur Stanley explained the need which had been felt for some time for proper club accommodation for the students, who had surrendered their previous none too good premises which were now being used as laboratories in response to the growing demands of medical education Not only, he said had these premises to be replaced, but quarters could no longer be found in the Hospital for the large resident staff, and the erection of the St Thomas's House was decided upon The scheme became immediately possible by the generosity of Lord Riddell who lent them at once the sum of £30,000 at very low interest, a similar sum, the governors thought, was within their capacity to raise, the House costing some £60,000 Sir Arthur Stanley thought the governors and staff of the Hospital could congratulate themselves upon St Thomas's House as a practical demonstration that their Hospital, though even its re-endowment dated from 1215, was still in the van

Lord Riddell and Sir Cuthbert Wallace, the Dean of the medical school, spoke briefly of the value from all points of view of the possession by the Hospital of such a social centre

The *Archbishop* expressed his great pleasure at being connected with the ceremony, the association was natural as for centuries before the present hospital arose on the south bank of the Thames the Archbishops of Canterbury had been located there, he thought to the benefit of their neighbours apart from anything religious or ecclesiastical

The Lord Mayor of London thanked the Archbishop in the name of the City of London, and Sir George Newman spoke of the value of social amenities to a university medical school The Archbishop then unveiled the memorial and received through Mr. C A R Nitch a cheque for £700, money contributed by the honorary staff of the Hospital, for the furnishing of the club room

A short service having been conducted by the Rev. R B Cornish the proceedings closed with the singing of the National Anthem

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MUNICIPAL DENTAL HOSPITAL — Mr John Wheatley, M P, recently opened a municipal dental hospital which has been started at Shoreditch, under the powers granted to borough councils to establish hospitals Dental work will be done for the maternity and child welfare centre and treatment will also be given at moderate fees to persons residing or working in the borough The staff includes an anæsthetist and a dentist who is also a registered medical practitioner It is intended that the new institution shall give dental care to people who would not otherwise get it, and propaganda will be undertaken to impress on the inhabitants of Shoreditch the need for looking after their teeth

Medical News.

SOCIETY OF APOTHECARIES OF LONDON —At recent examinations the following candidates passed in the undermentioned subjects —

Surgery —L G Apps, P Brookes, and W H Collins London Hospital, A. F J D'Arcy, St Mary's Hospital, W Howard, Liverpool S B S Smith, St Bartholomew's Hospital, and L Wasef, Manchester

Medicine —D K Reynolds, King's College Hospital, and S K Rigg, Bristol

Forensic Medicine —J Bramall, Leeds, C M Brock, Durham J A Fernandez, St Bartholomew's Hospital, W D Neill, London Hospital, and D K Reynolds, King's College Hospital

Midwifery —P Brookes, London Hospital, R P Charles, King's College and Charing Cross Hospital, W Howard, Liverpool, H S Marks, Guy's Hospital, B Rosenan Middlesex Hospital, S B S Smith, St Bartholomew's Hospital, and M A Yousef, Liverpool

The Society's diploma of licentiate was granted to Mr L G Apps

UNIVERSITY OF GLASGOW —On April 23rd the following degrees were conferred .—

M D

†R L Mackay, *D M Lindsay, *James Lindsay, Grace M Lintock, and P O Moffat

CH.M

†J R Learmonth

B Sc

In Public Health —R L Leask

M B, CH B

With Honours —James Richard and W F Greer

With Commendation —F T Land, Albert Sharman, C A Robinson, Jeannie M'C Robertson, and Hugh Black

Ordinary Degree —Waradea Abdurahman, Margaret K M Alexander, Archibald Blair, G F Cables, Angus Campbell John Campbell, Margaret C Campbell, Colomba C Caraldi, Hugh Dickie, Joseph Downes D J Ferguson J S Ferguson, J A Fleming, H W O Frew, J P Galloway, Thomas Gibson, Mary L Gilchrist, Marjorie Gillespie, W H Graham, B M Hegarty, James Hepburn, James Hill H Y Lavelle, J L M'Colm, E C Macdonald, Isabel M Macdonald, C J M'Ghee, I S M'Gregor, A A M'Millan D R M Pherson, Alexander Matchett, J F Milne, R A Neill, R L Paterson Annie B Price, J A Reid, J F Russell, F F Schorn Sydney Sharman, J S Sharpe, J B Simpson, Nathan Smith, Peter Spence, A M'D Steel J R Sutherland Anne I Symington, A C Thomson, Donella A F Watson, William Watson, and Edward Yoddes

* With commendation for thesis
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UNIVERSITY OF LONDON *London Hospital Medical College* —The Schorstein Memorial Lecture will be delivered by Prof Knud Faber, of the University of Copenhagen at 4 15 P M, on Thursday, May 19th, in the Anatomical Theatre of the College His subject will be Gastritis, Its Relation to Achylia and Ulcer Members of the profession are invited to attend

UNIVERSITY OF BIRMINGHAM *William Withering Memorial Lectureship* —A course of ten lectures on Organic Inheritance in Man is being given by Dr F A E Crew at the Medical School, Edmund-street, Birmingham The first two lectures were delivered on April 27th and 28th. Subsequent lectures will be given at 4 P.M on May 4th, 5th, 12th, 19th, 25th, 26th, and June 1st and 2nd

INDIAN MEDICAL SERVICE DINNER —The annual dinner of the Indian Medical Service will be held at the Trocadero Restaurant on Wednesday, June 15th, at 7 15 for 7 30 P.M. Major-General R W. S Lyons has been invited to take the chair Tickets and all particulars may be obtained from the joint hon secretary, Colonel J J Pratt, I M S (ret), 18, Nevern Mansions, Warwick road, London, S W 5

NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS —The thirteenth annual conference of this Association will be held at the House of the British Medical Association, Tavistock-square, London, W C 1, on June 30th and July 1st and 2nd It will be opened on Thursday, June 30th, at 10 30 A.M. by Mr Neville Chamberlain, the Minister of Health, and the main subject of discussion will be the present lines of attack on tuberculosis and their relative value Amongst those who will take part are Sir John Robertson Prof H R Kenwood, and Prof Edgar L Collis Visits will be paid to various institutions and housing schemes The conference will be open to all persons interested in tuberculosis on payment of the fee of one guinea

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Droitwich Spa Brine Baths—At 3 30 P M to-day, April 29th, Mr Neville Chamberlain, Minister of Health, is to open extensions to the St Andrew's Brine Baths at Droitwich

Medical Golfing Society—The final of the Knock-out Tournament was won by Mr J. Cunning, the runner-up being Dr E Playfair

Gift to Birmingham Hospitals—Mr W. R. Morris, the motor-car manufacturer, who recently gave £104,000 to St Thomas's Hospital, has made a gift to the Lord Mayor of £25,000 for the Birmingham hospitals

Victoria Park Hospital, London—It was stated at the annual meeting last week of the City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, that, owing to repeated deficits, the Saunderton Sanatorium has been closed The Research Institute given by the Prudential Assurance Company is approaching completion and will be opened formally in a few weeks' time It is hoped to raise a fund of £25,000 to enable the hospital to be enlarged and the sanatorium reopened

Mr Spahlinger and the Welsh National Memorial.—In a report presented to the Council of the Welsh National Memorial Association at its quarterly meeting in Chester on April 22nd the Medical Committee states "The application of public or other funds towards the Spahlinger Institute cannot be recommended by this committee The publicity campaign on behalf of the Spahlinger movement is to be deprecated as unjustified by the evidence so far adduced, and to be deplored as raising false hopes in the minds of sufferers from tuberculosis" The report is to be considered further at a special meeting of the Council, to be held at Shrewsbury in May

Analysis of Whole-fruit Jam—At Salford Police court on April 6th a manufacturing company was fined £20 and costs for selling to the city food inspector a pot of jam which was not of the quality and substance demanded The jam was advertised as being made from "freshly gathered whole fruit, ripe and perfect" Analysis showed that the sample contained cane-sugar, 26 parts, invert sugar, 32, glucose syrup and unfermentable matter, 6, insoluble solids and ash, 2, and water, 31 The jam was coloured with an aniline dye, and contained 20 parts per million of sulphur dioxide There was practically no whole fruit in it The sample had been made from fruit pulp preserved with sulphur dioxide A plea of guilty was entered, and it was stated that the advertising agents of the firm had made a mistake.

An Egyptian Congress Discussion of Tropical Diseases—A medical Congress for the discussion in particular of tropical diseases will take place in Cairo from *Dec 15th to 24th* The Committee of Honour includes the names of Profs J L Faure and A Loutfi el Sayed as Presidents, and Dr Andrew Balfour, Prof J W W Stephens, Dr Aldo Castellani, and Dr J G Thomson The Congress is being organised by the *Revue Pratique des Maladies des Pays Chauds*, and the Secretary-General is Dr Zeitoun (32, rue Gay Lussac, Paris) There will be committees for publication and propaganda purposes The scientific committee consists of Professors and Doctors Strong, R H Elliot, Aldo and Edward Perroncito Madsen, Warrington, Brumpt, Heckenroth Reynaud, Gilbert Sicard, Tuffier, Duval, Guiart, Besançon, Marchoux, Mandoul, Joyeux, Neveu, Lemaire, Nobécourt, Léon Bernard, Bertin-Sans, Jeannin, Victor Pauchet, Rieux, Radais, Audibert, Sorrel, Nattan-Larrier, Sartory, Vuillemin, Tanon, Brulé, Garin, Gaujoux, Leenhardt, Gougerot, Dalché, Morax, F Ramond, Ravaut, Rist, Sanarelli, and Tépine

The work of the Congress will be to receive communications and to organise conferences upon diseases generally, and especially upon tropical diseases, such as abscess of the liver, bilharziasis, oriental sore, leprosy, trypanosomiasis, kala-azar, trachoma, malaria, yellow fever, and undulant fever, general hygiene being considered The sections range over the whole of medicine and surgery and pathology, especially tropical, classified under bacteriology, urology, gastro-enterology, pharmacy, parasitology, dermatology, oto-rhino-laryngology, pediatrics, tuberculosis, hygiene, and veterinary medicine The titles of communications and their résumés must be sent to Dr Zeitoun before Oct 1st The time allowed for each of the communications will be 10 minutes and 20 minutes for the conferences

There will be an international Exhibition of Arts and Sciences, as applied to medicine, surgery, pharmacy, and sanitary administration A detailed programme with the conditions of membership can be obtained on request from the Organising Committee, and those joining the Congress will be granted facilities of travel and reduction of fares by the steamship companies on production of their cards of membership

Parliamentary Intelligence.

HOUSE OF COMMONS.

TUESDAY, APRIL 26TH.

THE House of Commons reassembled on this date after the Easter recess

Chemical Substances in Flour.

Mr DAY asked the Minister of Health whether, in view of the report of the departmental committee on the treatment of flour with chemical substances, he was considering the introduction of legislation to enforce a recommendation that flour should be in the product of the milling of wheat without the addition of any foreign substances, and, in view of the menace to the health of the nation, would he consider incorporating in any legislation introduced a clause that would in future prohibit the making or kneading of bread by hand by the introduction and installation of mechanical mixers—Mr CHAMBERLAIN replied No, Sir, I am not proposing, at present, to introduce legislation of the nature suggested

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole street, W

TUESDAY, May 3rd —5 30 P M, ORTHOPÆDICS Annual General Meeting Election of Officers and Council Paper Mr Norman D Royle (Sydney University) The Treatment of Spastic Paralysis by Sympathetic Ramisection (illustrated by "Kodascope" projector)

WEDNESDAY —5 30 P M, TROPICAL DISEASES AND PARASITOLOGY Annual General Meeting Election of Officers and Council Paper Dr P Y Lampe *Schistosoma mansoni* in Surinam (communicated by Dr J B Christopherson)

FRIDAY —5 P M, LARYNGOLOGY (Cases at 4 P M) Annual General Meeting Election of Officers and Council Paper and Demonstration Dr W Jobson Horne An Epidiascopic Demonstration of Chronic Hypertrophic Laryngitis with Some Observations on Treatment Cases and specimens will be shown by Mr A R Tweedie and others 8 30 P M, ANÆSTHETICS Annual General Meeting Election of Officers and Council

SATURDAY —OTOLOGY The Annual General Meeting will be held at 1, Wimpole street, W, at 9 15 A.M., when the election of Officers and Council will take place Immediately after, Members will proceed to the North-Eastern Fever Hospital, St Anne's road, Tottenham Transport is being arranged to and from the Hospital in time to be back at the Society's house by 12 30 P M Demonstrations of radiography of the mastoid in children, treatment by artificial sunlight, &c, will be given

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S W

TUESDAY, May 3rd —5 P M, Dr C Gordon Douglas The Coördination of the Respiration and Circulation with Variations in Bodily Activity (First Oliver Sharpey Lecture)

THURSDAY —5 P M (Second Oliver Sharpey Lecture)

UNIVERSITY COLLEGE, Gower street, W

TUESDAY, May 3rd, and following Wednesday and Friday —4 30 P M, Prof J S B Stopford Sensation and the Sensory Pathway (admission free)

KING'S COLLEGE, Strand, W C

TUESDAY, May 3rd —5 P M, Prof R J S McDowall Autonomic Nervous System (First of four free lectures)

INSTITUTE OF PATHOLOGY AND RESEARCH, St Mary's Hospital, W

THURSDAY, May 5th —5 P M, Prof C Prausnitz (Institute of Hygiene, Breslau) Experimental Researches on the Nature of the Bacteriophage

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W

MONDAY, May 2nd, to SATURDAY, May 7th —FELLOWSHIP OF MEDICINE Mr Goulden will give a demonstration on Tues, at the Royal London Ophthalmic Hospital at 1 P M Free to members of the medical profession —ROYAL FREE HOSPITAL, Gray's Inn-road W C Wednesday, 5 P M, Demonstration by Prof McIlroy 5 15 P M, Dr C B Heald lecture demonstration —ROYAL WATERLOO HOSPITAL, Waterloo road, S E Comprehensive course in Medicine.

Surgery and Gynæcology — London School of Tropical Medicine, Endsleigh-gardens, N W Tuesday, Dr Manson-Bahr Thursday, Dr Low Lecture-demonstrations —Maudsley Hospital, Denmark Hill, S E Afternoons only Special course in Psychological Medicine —London Lock Hospital, Dean street, W Comprehensive course Clinical teaching in Out patient Department and formal lectures —All Saints' Hospital, Vauxhall Bridge-road, S W Afternoons and evenings Demonstrations, including cystoscopies and lectures

Further information from the Secretary

NORTH-EAST LONDON POST GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N

Monday, May 2nd —2 P M, Medical Cases in the Wards 2 30 P M to 5 P M, Medical, Surgical, and Gynæcological Clinics Operations

Tuesday —2 30 P M to 5 P M, Medical, Surgical, Throat, Nose, and Ear Clinics Operations

Wednesday —2 30 P M to 5 P M, Medical, Skin, and Eye Clinics Operations

Thursday —11 30 A M, Dental Clinic 2 30 P M to 5 P M, Medical, Surgical, and Ear, Nose and Throat Clinics Operations

Friday —10 30 A M, Throat, Nose, and Ear Clinics 2 30 P M to 5 P M, Surgical, Medical, and Children's Diseases Clinics Operations

ROYAL NORTHERN HOSPITAL, Holloway-road, N

Tuesday, May 3rd —3 15 P M, Dr J W McNee Pathology and Treatment of Chronic Non-suppurative Arthritis

LONDON SCHOOL OF DERMATOLOGY, St John's Hospital, 49, Leicester-square, W.C

Tuesday, May 3rd —5 P M, Dr J A Drake Pyogenic Infections of the Skin

Thursday —5 P M, Dr H G Adamson Acne Vulgaris

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE

Tuesday, May 3rd —4 15 P M, Mr W R Douglas Hæmorrhoids

Friday —4 15 P M, Dr E B Leech Demonstration of Medical Cases

CHADWICK PUBLIC LECTURES

Tuesday, May 3rd —5 15 P M (at the Medical Society of London, 11, Chandos-street, W), Sir Thomas Legge The Teaching of Industrial Medicine

Appointments.

Idris, T H W, L M S S.A, has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Porlock District of the County of Somerset

Ironside, Redvers, M B, Ch B Aberd, M R C P Lond, Assistant Physician to the Hospital of SS John and Elizabeth, St John's Wood

Jones, Dilys M, M B, B Ch Wales, Woman Medical Officer to the Welsh Board of Health

McLay, K, M D St And, Medical Referee under the Workmen's Compensation Act for Selkirk County

Williams, R Lester, M B, B Ch Camb, F R C S Eng, Surgical Registrar at the London Lock Hospital, Dean street

Vacancies.

For further information refer to the advertisement columns

Bolton, County Borough Education Committee —Asst M O H, &c £600

Burton-on Trent —Asst M O H £600

Canterbury Dispensary, 60, *Burgate street* —Res M O £100

Cardiff City Mental Hospital, Whitchurch —Res Clin Asst £52 10s for 6 mos

Carshalton, Surrey, Queen Mary's Hospital for Children —Senior Asst M O £650

Central London Throat, Nose and Ear Hospital, Gray's Inn-road, W C —Hon Asst Out patient Registrar Also Res H S £75

Charing Cross Hospital, W C —P to Children's Dept Also Obstet Reg

Colchester Essex County Hospital —H S £150–£200

Croydon County Borough —Asst M O H, &c £600

Croydon General Hospital —Hon Jun S

Elizabeth Garrett Anderson Hospital Euston road —H P, Obstet Asst and Two H S's Each at rate of £50

Evelina Hospital Southwark, S E —Temp Asst Aural S

Freemason's Hospital and Nursing Home, 237, Fulham-road, Chelsea, S W —Res M O At rate of £250

Golden square Throat Nose, and Ear Hospital, Piccadilly Circus, W —H S £100

Herefordshire General Hospital Hereford —Res H P £100

Leeds, St James' Hospital —H P's and H S's Each £200

Newark Hospital —Res H S £200

North Middlesex Hospital, Edmonton N —Res M O £200

Norwich Norfolk and Norwich Hospital —Ophth Surgs, Lecturer on Pharmacology and Therapeutics Also H S £120

Paddington Board of Guardians —Outdoor Medical Services Asst M O £330.

Royal Free Hospital, Gray's Inn-road, W C —Res Anæsthetist Also Hon Asst Radiologist

Ryde, Royal Isle of Wight County Hospital —Anæsthetist £100.

Salford Royal Hospital —Med Reg £200

Sheffield Royal Hospital —Res Anæsthetist

Stamford, Rutland and General Infirmary —H S £150

Stirling District Mental Hospital, Larbert —Second Asst M O. £275

Stoke on-Trent, North Staffordshire Royal Infirmary —H P £150

Sudan Government —Laboratory Asst £324

Sudan Government, Wellcome Tropical Research Laboratories, Khartoum —Asst Bacteriologist £720

West Bromwich and District Hospital —Hon Phys

West London Hospital, Hammersmith-road, W —Hon Med. Radiologist Also Asst P

Western Ophthalmic Hospital, Marylebone road, N W —Hon Asst S

Westminster Hospital, Broad Sanctuary, S W —Fourth Asst, Phys

Wolverhampton and Staffordshire Hospital —H S At rate of £150

Woolwich and District War Memorial Hospital, Shooters Hill —Hon S's, P's, Radiologist and Anæsthetist

Births, Marriages, and Deaths.

BIRTHS.

Adams —On April 23rd, at Lynedoch-crescent, Glasgow, W, the wife of Douglas K Adams, M D, of a son

Campbell —On April 19th, at Lexham gardens, London, W, the wife of Dr J M H Campbell, of a daughter

Crowther —On Tuesday, the 26th April, at Bleak House, Penistone, to Florence Evelyn, the wife of Dr H A Crowther—a daughter

Hitchings —On April 14th, at Westfield, Hawkhurst, Kent, the wife of Dr D B Hitchings, of a son and daughter

Loveless —On April 11th at Queen's road, Ramsgate, the wife of Dr W B Loveless, of a daughter

Oram —On April 21st, at Lee terrace, Blackheath, S E, the wife of E H B Oram, M B, F R C S, of a son

MARRIAGES.

Anderson—Glaister.—On April 22nd, at Cathedral-square, U F Church, Glasgow, Frank E Anderson, M B, Ch.B, to Helen Douglas, only daughter of Dr and Mrs J N Glaister, Grafton-place, Glasgow

Clausen—Lennane —On Thursday, April 21st, Raymond John Clausen, M B, B S, to Elsie Edith *Lennane, L D S*

Herman—Franks —On April 20th, at the Parish Church, Tonbridge, Ashley Ernest Herman, O B E, F R C S Edin, to Noreen Joan, youngest daughter of Mr and Mrs Frank W Franks, Loampits, Tonbridge

Lloyd-Williams—De Lyons Pike —On April 23rd, at St John's Church Burgess Hill, Major Iorwerth Hubert Lloyd-Williams, M C, M B, R.A M C (T), to Gwladys, only daughter of Charles William and Lucy de Lyons Pike, of Burgess Hill

Lockyer—Morton —On April 26th, 1927, at St George's, Hanover square, by the Rev Canon Horsefield, D D, and the Rev Minos Devine, D D, Cuthbert Lockyer, M D., *F R C P*, *F R C S*, of Harley-street, W 1, to Violet Gwendoline Morton second daughter of the late Dr. Augustus Charles Morton and Mrs Morton, late of Aylsham, Norfolk

Weston—Morgan —On April 20th, at St. Germain's Church, Edgbaston, Bernard Archibald Astley Weston, M B, Ch B, D P H, to Margaret Morgan, only child of the late Lieut Patrick Morgan, R N, and the late Mrs Morgan, of Southport

DEATHS.

Robinson —On April 17th, at Guy's Hospital, John Robinson, M B, Ch B Edin, Medical Officer Dispensary, Canterbury

Watts —On April 21st at "The Ferns," The Burroughs, Hendon, George William Watts, L D S Eng F R.M S, aged 67.

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

Queen Charlotte's Maternity Hospital —The annual report for 1926 points the moral of antenatal care and treatment. Of the 194 emergency patients 9 died, while in the 1719 booked cases only three mothers died Among the 1588 patients attended in their own homes there was only one maternal death. There were 5000 antenatal patients The consequences of the longer period of training for midwives are stated to have been serious, the applications for training falling off so considerably that the income of the school was reduced by about £1500, moreover, additional paid nurses have had to be employed Of late there has been some improvement and the committee of management hope that "the dislocation caused by the drastic alteration in the rules of the Central Midwives Board will gradually disappear" An appeal is to be made for a quarter of a million for an extension which will provide 70 more beds, and for some endowment and research facilities

Notes, Comments, and Abstracts.

NUMERICAL RELATION OF THE SEXES IN MAN

At a meeting of the Edinburgh Obstetrical Society on March 9th a paper on the Human Sex-Ratio was read by Dr F A E Crew, director of the Animal Breeding Research Department and lecturer in genetics in the University of Edinburgh

It is established, he said, that the sex of an individual is determined at the time of conception by the working of a mechanism which is revealed in the differences in chromosome content of the gametes The female elaborates only one kind of ovum, but the male elaborates two kinds of sperm in respect of the elements of the sex-determining mechanism There is a male-producing sperm which, fertilising any ovum, yields a male, and a female-producing, which gives rise to a female This being so, it follows that at all times after conception there is a sex-ratio If the two forms of sperm are produced in equal numbers, if each kind is equally viable and functional, and if male and female zygotes are equally viable, then the secondary sex-ratio which obtains at birth should be equality, as was also the primary sex-ratio at conception If the secondary sex-ratio is not equality, then the primary sex-ratio was not equality or else there must have been a sexually selective mortality operating prenatally If the primary sex-ratio was not equality then either the two forms of sperm were not produced in equal numbers or else they were not equally functional

Selective Mortality

In point of fact the secondary sex-ratio is not equality, though not far removed therefrom It would seem therefore that the primary sex-ratio is also equality and that there is no considerable sexually selective prenatal mortality But there are certain observations which refute this conclusion It was found that the sex-ratio of the population considered by age-groups shows a continuous swing from 55 2 males 100 females in the "85 years and over" group to 101 5 males 100 females in the group at the end of the second year of life, whilst the sex-ratio among individuals 1 year old is 102 100 and that among the newly-born 104 100 There is a definite selective elimination of the males throughout, save during those age-groups when reproductive stresses (menstruation, menopause) bear so heavily upon the female

If the amount and sex-incidence of mortality during the first year of life are examined it is found that the sex-ratio of deaths during the first three months is 131 5 males 100 females, during the second three months, 121 100, during the third, 120 100, and during the fourth 113 100 More boys than girls die during the first year of life and during this period the excess of male deaths over female steadily decreases as the end of the year is approached Again there is a sexually selective mortality at work It is seen that postnatally the sex-ratio is not static but shows a swing from nearly equality at birth to very low in senility It becomes necessary, therefore, to inquire whether or not this swing is entirely postnatal, whether or not it is but a continuation of a process that has been operating natally and prenatally An examination of the amount and sex-incidence of stillbirths and of abortions will throw light on this question

The sex-ratio of stillbirths is about 133 males 100 females, which is higher than that of live births In the case of abortions it is impossible to deal with complete records Embryonic deaths during the earliest months of pregnancy will not result in recognisable abortion and must remain unrecorded The amount of abortion is about 20 per cent. of all conceptions Moreover, this prenatal death affects the sexes differentially and the sex-ratio of abortuses becomes higher and higher as conception is approached It would seem indeed that the primary sex-ratio must be somewhere about 170 males 100 females If this is so, then the primary sex-ratio is profoundly different from the secondary and the latter is equality, because throughout prenatal life there is a selective elimination of the males Far more males than females are conceived and far more males than females perish during the period conception-parturition Of course it may be that the primary sex-ratio is equality and that those agencies which lead to fœtal death bear more heavily upon the females during the first two months or so of pregnancy and thereafter more heavily upon the males But there is no evidence that this is so

The high primary sex-ratio may be the result of a differential production of the two kinds of sperm It might be that it is physiologically more expensive for an individual to elaborate female-determining sperm than male-determining On the other hand, it is possible that the two kinds being produced in equal numbers exhibit different powers of fertilisation There may be differences in mortality, a differential susceptibility to adverse conditions within the female passage, a difference in the power to penetrate the egg, or a difference in the response to the attraction of the egg Whatever may be the cause, it can be assumed that the male-determining sperm is a more efficient fertilising agent than is the female-determining Of the differences between male and female which lead to a sexually selective elimination of one sex nothing is known All that can be said is that the male zygote is so constituted that it cannot withstand the stresses of the act of living as well as can the female

Racial Needs of Modern Man

Certain suggestions of interest emerge from the study of the human sex-ratio It will be granted that one result of advance in our knowledge of the physiology of development and of the infant will lead to the salving of the male Antenatal clinics and child welfare centres will tend to modify the sex-ratio and so emphasise what already may be looked upon as one of the many disharmonies exhibited by the human From the point of view of the sex-physiologist a sex-ratio of equality during the reproductive years is so unnecessary as to be almost absurd Such a ratio is necessary only in those forms of life in which the female elaborates as many eggs as her mate does sperm, assuming that it is a criterion of biological fitness that a species should exhibit a maximum fertility-rate In the case of the human, whilst the female now exhibits a restricted sexual life, a prolonged gestation, a reduced fecundity, the sexual attributes of the human male are the same as those of males of species in which both sexes are equally fecund

This habit of producing a secondary sex-ratio of equality has no relation to the racial needs of modern man It must be regarded as a physiological legacy, being the expression of a mechanism which served its primitive possessors well, but which has not become modified as mankind, evolving, shaped and re-shaped its social organisation One male in this matter is the equivalent of very many females, and a low sex-ratio together with polygyny would seem to be all that is required for the propagation of the species But, of course, it is not the only aim of mankind

A GUIDE TO GHENT

Mrs Sydney Stephenson dedicates to the memory of her husband a small and handy guide to the City of Ghent (London George Pulman and Sons, Ltd Pp 78 1*s* 6*d*), issued in time to be useful to those who attend the annual conference of the Royal Institute of Public Health to be held there from June 1st to 6th next After an interesting historical preface Mrs Stephenson takes the visitor round the city, giving the history of each building in turn, and pointing out carefully the places from which extensive views can be obtained A map is included and enough information to enable the visitor to get about with ease

YEAR BOOK OF UNIVERSITIES OF THE EMPIRE

The Year Book of the Universities of the Empire for 1927 has just been issued by Messrs G Bell and Sons (pp 858, 7*s* 6*d*) First published in 1914, it is edited by Walter H Dawson for the Universities Bureau of the British Empire, 50, Russell-square, W C 1 From it we learn that there are now 71 British universities, their total calendars occupying some 50,000 pages, and in the year book the attempt is made to extract from each of these documents—some exceedingly bulky—information likely to prove of interest to universities and colleges, to Government departments, clubs, schoolmasters, and to the public generally For the various sections dealing with Great Britain and Ireland, Canada, Australia, South Africa, and India introductory chapters give such information regarding the history, regulations, and practice as pertains to all the universities, while each heading comprises a directory of the office and members of the staff of the universities with their degrees, the general information includes useful facts concerning libraries, museums, and laboratories, as well as general arrangements and statistics A group of valuable appendices deal with the regulations for obtaining the diplomas of the professional colleges, and other faculties and associations having power to grant degrees and diplomas, explain the conditions governing admission to various professions and careers—matriculation and entrance examinations, define the admission of students from abroad to universities of the United Kingdom, and supply lists of inter-university scholarships and Fellowships, of grants for research, and of constituent and ancillary schools Thus we can learn the distribution of subjects in which the universities severally may be said to specialise, lists of centres of research outside the universities being added A new appendix provides lists of titles of theses accepted for research degrees, this is not as full as the compilers had wished to make it, but the intention expressed to perfect the list in the next issue of the year book is welcome, for we can understand that such a category would be of real service

DISEASE IN THE COTTON INDUSTRY

A CONFERENCE has recently been held in London between officials in the Home Office, representatives of leading cotton employers' associations, and the Card and Blowing Room Amalgamation, which is a trade-union body chiefly concerned with cotton spinning in the preparatory stages The object was to discuss the evils of dust in the cardrooms and ascertain if an agreement could be reached regarding preventive regulations which could be included in the next Factories Bill. The most interesting feature of the conference was the presentation of a report by the insurance section of the trade union containing a classification of the different illnesses from which cotton workers in this particular part of the industry suffer

The table giving the "nature of illnesses causing absence from work" deals with the years 1923–24 and 1926 for men, and 1923–24 for women. The returns collated from the society's records are as follows —

—	Men			Women	
	1923	1924	1926	1923	1924
Total membership	6883	6971	7058	25,409	25,366
Sickness per thousand	11 21	17 45	20 9	15 36	18 35
Accident—injury	47	100	80	164	219
Accident—septic poisoning	11	15	90	75	85
Anæmia	3	7	7	286	322
Apoplexy	3	3	—	—	2
Appendicitis and peritonitis	5	13	18	32	47
Bladder disease	3	2	4	22	38
Bronchitis	160	247	409	391	489
Cancer	1	1	8	3	4
Diabetes	1	2	—	2	2
Ears and hearing	4	10	3	12	17
Epilepsy	—	5	—	5	10
Eyes and eyelids	14	8	11	36	59
Hæmorrhoids	4	9	10	14	9
Heart and blood-vessels	38	42	57	100	157
Hernia	7	6	14	14	11
Infectious diseases	9	6	—	28	28
Influenza and colds	132	240	214	932	1053
Kidneys	8	14	15	19	26
Liver	—	5	1	1	3
Neurasthenia, neuritis, neuralgia, hysteria	15	40	34	128	184
Nervous system (other than above)	15	12	25	26	71
Nose	3	4	9	1	23
Phthisis	9	11	26	29	40
Pneumonia and pleurisy	32	34	18	56	79
Rheumatic affections	61	99	133	304	330
Sexual organs	2	9	9	227	229
Skin (including ulcerations)	41	62	22	126	180
Stomach and bowels)	64	95	133	430	418
Tonsillitis and quinsy	34	37	49	290	327
Tubercular disease of joints, glands, skin, meninges, &c	—	4	11	20	29
Other illnesses	46	75	67	130	165
Totals	772	1217	1477	3903	4656

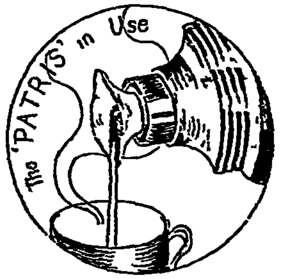
Another table dealing with disablement benefit states that during 1926, 256 persons were in receipt of this particular benefit Of this number, the following were certified to be suffering from—

Bronchitis	88 cases 6 deaths	343 68 } per thousand claims
Average age at date of claim		55 years 7 months
Average period of claim		1 year 9 months
Phthisis and tuberculosis	20 cases 3 deaths	78 150 } per thousand claims
Average age at date of claim		38 years
Average period of claim		2 years 8 months

These data display the women as experiencing more sickness than the men—which is usual for women between ages 15 and 45 as compared with men of similar age The age-distribution of the two sexes, however, is not given, but the men would nearly certainly be the older group They appear, during the comparable years 1923 and 1924, to have suffered more than the women from bronchitis and phthisis two diseases possibly attributable to greater exposure to dust, but less from anæmia, influenza, and colds In the absence of a table for comparison, stating the nature of illnesses experienced by a standard population, more definite deductions cannot be hazarded To day no such table exists for this country, while the data stated above are not presented in such a way as to permit comparison with the studies* made in America of sickness among industrial employees The whole subject of invalidity statistics is one of great importance, and it is already, we understand, engaging the attention of the Medical Research Council.

THE "PATRIS" SAFETY POURER

IT is difficult to pour out the contents of a vacuum flask in a steady stream, while droplets of the liquid often find their way inside the metal case, with a consequent rusting of the metal and rotting of the packing In order to overcome these disadvantages the "Patris" Company, 11, Thornfield-road, Bishop's Stortford, has placed on the market a device which, as is shown in the illustration, takes the form of a double-lipped glass funnel fitted to the mouth of the flask by means of a cork collar This allows the liquid to flow in a steady stream, splashing is entirely prevented The neck of the funnel is closed by an ordinary cork stopper The device will be appreciated by the user of the vacuum flask for ordinary purposes and particularly by the sick-room attendant, who may have to supply an invalid with a warm liquid at intervals



THE BEARDLESS SURGEON

Dr Herbert Smith (Ealing), writing in reference to the issue of THE LANCET which contained the report of the celebration of the Lister Centenary, refers to an episode which was chronicled in the *Westminster Gazette* last week, and suggests that the occurrence inaugurated "a beardless vogue" among surgeons "When I was house surgeon at —— hospital in 1881," the quotation runs, 'my colleague's whiskers were burnt off by the flaming-up of the 'Listerian Kettle' and, things being righted, a nurse remarked, 'Let us spray'" The occurrence may not have been unusual, while the question of disinfection of flowing hair formed a further invitation to the razor

TREATMENT OF ALOPECIA AND MENINGITIS

To the Editor of THE LANCET

SIR,—Kindly permit me to add to my notes on the use of iodine in cases of bursitis and adenitis (THE LANCET, April 2nd, p 741) a more definite description of the treatment of the aborting of abscesses

The most scrupulous cleansing of the surface of skin attacked, and then the use of a soft ointment of hydrarg perchloridi, 1 in 1000, liberally spread on lint cut to the size of the presenting abscess This should be repeated daily, in extensive abscesses, or even in those pouring out pus, I have never required more than a third dressing

Now I wish to give my treatment of meningitis This is what Sir Gilbert Barling consented to being used in my own case and with which he expressed his great pleasure (1) In alopecia first wash well the scalp and allow to dry thoroughly Then with a 2-inch square of soft sponge apply the following —

℞	Antim potass tart	ʒ ½
	Sp vin rect	℥ ½
	Aq destillat ad	℥ 4

When the scalp is still moist massage with the tips of the fingers for a few minutes In the case of females the hair should not be "put up" till completely dry, as an accumulation of the fluid in any one place would be followed by blistering, and this will not otherwise happen It should not be used more than twice a week This has given my scalp—quite bald at 75—a fairly presentable crop over nearly the whole surface. (2) In meningitis I have found splendid result by using the same salt, in the following prescription —

℞	Ant potass tart	gr i
	Syr cinnam	ʒ ½
	Aq font. ad	℥ 4

For a child of 1 month ʒi 4ta quaque hora, and if vomiting ensues reduce the number of doses It is well to use iced water to the head, and, if convulsions follow, to put an ice-bag along the spine from the neck to the sacrum, on for 20 minutes and off for ten I have found this give splendid results in adult cases of convulsions which defied all other treatment I meant to have concluded with three cases, and see I have gone one more.

I am Sir, yours faithfully.

Clevedon Somerset April 19th, 1927 E. T BURTON

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* Vide Public Health Reports U S America January 1926 xli 113–131

OPHTHALMIC HOSPITAL IN JERUSALEM.

The report for 1926 of the Ophthalmic Hospital, founded in Jerusalem by the Order of St John, shows continued progress The number of new patients seen was 18,127 The number admitted to hospital was 1499 and the number of operations 4234 Of the new cases 7 6 per cent were blind in one eye, 2 5 in both—"blindness" being defined as inability to count fingers at one metre Of the blindness 70 per cent could be traced directly or indirectly to acute conjunctivitis The majority of the operations—about four-fifths—were performed for trachoma and its sequels In 1924 a scheme of ophthalmic clinics at six selected centres in Palestine was begun, staffed by specially trained doctors and nurses The work accomplished by these clinics shows *an increase of 50 per cent over that of 1925* This is a good record, but the report emphasises the need for this branch of the work to be placed on a permanent footing

A WARNING

We are informed that a man who may give the name of Dr Winter has been calling on professional men, particularly doctors and accountants, soliciting help and obtaining either money or clothing He may describe himself as an accountant and may say that he is an old Rugby and Oxford man, he has acquired a certain amount of information about these two places to be plausible He suffers from pulmonary tuberculosis and will quite likely state *that he has been at Yardley-road, Lenham, or Papworth* Sanatorium, the latter statements being true He has lately been "working" the Oxford-Slough area He is about 33, height 5 ft 5 in, of spare build, with bushy eyebrows, and rather penetrating downcast eyes which do not look one in the face Recently he was dressed in a dark grey suit and trilby hat Doctors are advised to take necessary precautions should he call on them

ANNUAL CHARITIES REGISTER

The importance of London charities in our national life is manifest from the figures contained in the Annual Charities Register and Digest[1] for 1927 All the charities in or available for London are classified here in a manner convenient for reference, and, excluding missionary and religious institutions, the turnover enumerated in the register amounted for the year 1924-25 to £14,965,307 This is a slightly less figure than marked the previous year, and no estimate for the later 12 months is forthcoming, but there is certainly a vast sum at issue The voluntary contributions included in this sum amounted to £6,192,883, while legacies accounted for £1,387,166, a fluctuating source of income designed in many cases to continue, by way of interest, the contribution of a dead supporter It should be noted that the number of the charities deriving their income from purely metropolitan sources, and expending it solely upon metropolitan cases, is comparatively small, but the number which, while located in the metropolis, derive their income from all parts of the kingdom, or afford assistance to applicants from all parts, is very large Both as a summary to the volume of charity and as a classified list of the institutions dispensing it, the book is a valuable one, while a full index makes reference easy The compilers are to be congratulated on their labours

HEALTH CONDITIONS IN BRUNEI

This State is situated between British North Borneo and Sarawak, and is 770 nautical miles distant from Singapore It consists of an area of about 2500 square miles containing a population of some 27,000 In 1885 the Sultan agreed that Great Britain should control his foreign relations and in 1905 under a further agreement a British Resident was appointed to advise and assist in the administration of the State Mr E E F Pretty, the present Resident, has just furnished to the Colonial Office his report for the year 1925 In the Medical Section it is stated that the general death-rate was lower than in the previous year, though the infantile mortality stood at 311 2 per mille as against 303 9 in 1924 The ratio of births to infantile deaths was 3 18 to 1 The general death-rate of 30 68 per mille showed a great improvement on the 1924 figures, and contrasted very favourably with the Labuan rate of 36 35 for 1925 All these figures tend to show that there must be a good general *average of fair health amongst the inhabitants, and* apparently the principal disease is malaria Beyond a few cases of mumps and chicken-pox, no contagious diseases There were 1285 vaccinations in Brunei and the out-stations, as against 1026 in 1924, and these figures, contrasted with 993 births in 1925 and 1090 in 1924, tend to show that the younger generation should be well protected against small-pox Dr H W Furnivall medical officer of Labuan, acted as medical officer of Brunei throughout the year, and paid in all 18 visits Sixty-four cases from Brunei territory were treated in Labuan Hospital A total of 2748 were treated in the Brunei Government Dispensary and out-stations, as against 2520 in 1924, most of these cases were among Government servants, police, and prisoners, and the nature of the diseases was chiefly of a trivial character The following is a comparative table of the principal diseases treated in 1924 and 1925 —

	1924	1925.
Malaria	215	204
Diarrhœa	64	78
Constipation	118	146
Bronchitis	89	110
Round worms	50	70

There were 37 Europeans resident on the average in the State, and they enjoyed good health though malaria claimed some victims in the out-stations One European child was born during the year 1925 was remarkable for its phenomenal rainfall, a maximum of 12 inches in the 24 hours, and a total of 213 inches for the year being recorded on Labu estate In Brunei town it rained on 226 days out of the 365

DEATHS AMONG SWEDISH SEAMEN

In *World's Health* for April Prof H Davide, of Stockholm, gives a classified list of deaths among Swedish seamen for each of the ten years 1911-1920 There were in all 6259 deaths, the number was greatly increased in 1918 by the influenza epidemic, which seems to have raised the deaths from "other infections" by 300, and those from pneumonia by 35, but to have left the deaths from tuberculosis unaffected Of all deaths one-quarter were due to accidents, as compared with one-half in the British merchant marine (and one-twelfth among men of seafaring ages in the general British population) Of the Swedish deaths 15 per cent (British 2½) are ascribed to tubercle, but *4 per cent*, as in England, to pneumonia In Sweden 4 per cent. are ascribed to malignant disease, but many less in England where, perhaps, men sooner cease to go to sea

Before joining a Swedish ship a sailor must be declared to have no disease unfitting him for service at sea, further, if he is going abroad he must not suffer from venereal disease in an infectious stage His diet is prescribed by law, as is also his accommodation on board (120 cubic and 15 square feet) During any period of 48 hours he must not work more than 24 if he is a sailor, more than 18 if an officer, more than *16 in the engine room* A medicine chest as prescribed must be provided, and the captain must give his men the treatment they need and send them to hospital if necessary Venereal disease in Sweden is treated at the expense of the State, which also provides treatment for seamen patients when they are abroad

Although there is no statement of the total numbers of seamen among whom the deaths occurred, and no attempt to elicit death-rates, the figures afford valuable information for comparison

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Savill Memorial Oration

ON

LOCAL EPILEPSY.

By GORDON HOLMES, C.M.G., C.B.E.,
M.D.Dubl., F.R.C.P.Lond.,
PHYSICIAN TO CHARING CROSS HOSPITAL AND TO THE NATIONAL HOSPITAL, QUEEN SQUARE.

THE problem of epilepsy is of perennial interest to the neurologist, and the numerous discussions that have been recently devoted to it, and the various hypotheses on its nature and origin that have been advanced, indicate only too clearly our ignorance of its essential pathogenesis. I have chosen as the subject for this lecture Local Epilepsy, as I believe a study of the simple phenomena produced by irritation of the brain, all of which are closely related to symptoms of the major disease, may throw light on the nature of the latter. Few of these observations are original, but they have been lost sight of or neglected by many who have lately overladen the literature of this subject. Excitability is one of the essential functions of nervous tissue, and *irritation* is a convenient term for the inducing of local activity in it by abnormal or pathological stimuli, which are certainly unlike in nature as well as in origin those that normally excite it. The term *discharge*, originally used by Hughlings Jackson, may be applied to the immediate response to such irritation.

The symptoms of local irritation of the brain are generally, in contrast to those of destructive lesions, paroxysmal or episodal. All the evidence we possess goes to show that these symptoms occur only when the grey matter is involved, and never when the white matter is alone affected. Further, they appear mainly when the cerebral cortex is excited; we have no convincing evidence that they result from disease of the basal ganglia or of the grey matter of the brain stem or spinal cord, though epileptiform phenomena have been observed with disease and experimental excitation of the pons Varolii. Physiological observations also confirm this view; while electrical stimulation of the cerebral cortex can give rise to epileptiform attacks—that is, tonic or clonic muscular contractions which are at first local, but tend to spread to neighbouring groups of muscles—similar stimulation of the subjacent white matter produces isolated twitches only. The fact that if a local spasm has once occurred it is more easily elicited again, and that if it persists for a time it is followed by temporary exhaustion of the part of the nervous system that initiates it, also confirms this, for the cortex is exhaustible while the conducting fibres are scarcely, if at all, so; and it is a property of the cortex that the occurrence of any physiological event in it facilitates recurrence of that event. Many different forms of disease may excite these epileptiform phenomena; hæmorrhages, softenings, patches of encephalitis and meningitis, tumours, and many other such affections may be effective—in fact, any disease which borders upon or even invades, but does not destroy or reduce seriously the functional capacity of, the tissues from which the symptoms may arise. If these are destroyed or seriously damaged the symptoms no longer occur.

It is probably only from the simplest and more highly organised afferent or recipient and efferent or motor cortical mechanisms that these phenomena can result, and they consequently always assume relatively simple forms. The local motor seizures which were first fully described and interpreted by Hughlings Jackson are due to excitation of the so-called motor area in the precentral gyrus and consist in tonic and clonic spasms of groups of muscles; they never take the form of purposive or more complicated acts, for these depend on the elaboration by other parts of the brain of motion patterns in which the serial order of contraction of various groups of muscles, as well as the force, the duration, and the rate of the contractions are already prearranged. The precentral gyrus probably plays little or no part in the formulation of these, but merely transmits to the lower motor centres what we call volitional impulses in the order determined by these patterns. We may, in fact, compare it with the keyboard of a piano by means of which the notes when sounded together and in sequence according to a prearranged score produce music, but which itself plays no part in determining harmony, and when struck by fingers not guided by a music pattern produces only discord. A purposeless discord of movement characterises an epileptic seizure. It is true that more complex movements of a purposive type occur in epilepsies, but only in the states of automatism that succeed or replace a seizure, and it is improbable that these have a local origin. Similarly, the sensations excited by irritation of the sensory cortex and projected to the periphery of the body are always simple and crude; they neither give rise to the illusion of peripheral stimulation, nor secondarily to the performance of complicated acts. Excitation of the cortical areas of vision and hearing lead to similar simple perceptions only.

LOCAL MOTOR EPILEPSY.

We may now consider the symptoms produced by *irritation* of the motor and sensory regions of the brain and of those parts of the cortex that receive impressions directly from the organs of special sense.

Local motor epilepsy was, it is true, recognised and described by Bravais in 1827, but it was Hughlings Jackson who first associated it with disease of the opposite hemisphere of the brain: his observations on it threw the first light on the localisation and organisation of the cortical motor apparatus. It consequently bears, by universal consent, the title "Jacksonian Epilepsy," originally proposed by Charcot. The chief features of Jacksonian epilepsy are well known, but its study helps to explain some of the phenomena of the rarer forms of local epilepsy.

Electrical stimulation of the brain, which was first introduced by Hitzig and Fritsch and employed with such noteworthy results by so many of our countrymen, as Ferrier, Schäfer, Horsley, and more recently by Sherrington, Leyton and Graham Brown, has confirmed and extended Jackson's original conclusions. It has revealed that in the cortex lying immediately in front of the fissure of Rolando there is a minute localisation, not rigid or even stable, it is true, of movements of the opposite side of the body. As the motor points are arranged in the cortex in a manner corresponding with the anatomical relations of the parts in which they initiate movement, a stimulus that spreads over the cortex excites a sequence of movements which spread or march in a more or less constant and regular manner from the segment of the body that is first convulsed. This is the essential feature of a Jacksonian attack; any chart of the motor representation of the cortex explains the march of the convulsions. The regularity of the march and the rate and extent to which the convulsion spreads depend on the nature of the excitation and probably, too, on the local condition of the brain.

The attack can be divided into two stages; the first consists of clonic movements, sometimes preceded or accompanied by tonic spasm. These clonic movements frequently spread so slowly and remain limited to one segment so long that it is possible to study them carefully. They consist of brisk tetanic contractions of all the muscles that coöperate in the movement; when it is flexion of the elbow, for instance, the brachialis anticus, supinator longus, and often the long flexors of the wrist and fingers contract as well as the biceps. In the clonic stages there seems to be always a relaxation of the antagonist muscles, of the triceps for example, when the elbow flexes. An interesting observation which I have been able to make repeatedly is that if the limb which is in clonic spasm is moved passively into the extreme position to which the clonically contracting muscles would bring it, the spasm ceases in these muscles and spreads to another set, generally to their antagonists. If, for instance, while there is

OPHTHALMIC HOSPITAL IN JERUSALEM.

THE report for 1926 of the Ophthalmic Hospital, founded in Jerusalem by the Order of St John, shows continued progress The number of new patients seen was 18,127 The number admitted to hospital was 1499 and the number of operations 4234 Of the new cases 7 6 per cent were blind in one eye, 2 5 in both—"blindness" being defined as inability to count fingers at one metre Of the blindness 70 per cent could be traced directly or indirectly to acute conjunctivitis The majority of the operations—about four-fifths—were performed for trachoma and its sequels In 1924 a scheme of ophthalmic clinics at six selected centres in Palestine was begun, staffed by specially trained doctors and nurses The work accomplished by these clinics shows an increase of 50 per cent over that of 1925 This is a good record, but the report emphasises the need for this branch of the work to be placed on a permanent footing

A WARNING

WE are informed that a man who may give the name of Dr Winter has been calling on professional men, particularly doctors and accountants, soliciting help and obtaining either money or clothing He may describe himself as an accountant and may say that he is an old Rugby and Oxford man, he has acquired a certain amount of information about these two places to be plausible He suffers from pulmonary tuberculosis and will quite likely state that he has been at Yardley-road, Lenham, or Papworth Sanatorium, the latter statements being true He has lately been "working" the Oxford-Slough area He is about 33, height 5 ft 5 in, of spare build, with bushy eyebrows, and rather penetrating downcast eyes which do not look one in the face Recently he was dressed in a dark grey suit and trilby hat Doctors are advised to take necessary precautions should he call on them

ANNUAL CHARITIES REGISTER

THE importance of London charities in our national life is manifest from the figures contained in the Annual Charities Register and Digest[1] for 1927 All the charities in or available for London are classified here in a manner convenient for reference, and, excluding missionary and religious institutions, the turnover enumerated in the register amounted for the year 1924–25 to £14,965,307 This is a slightly less figure than marked the previous year, and no estimate for the later 12 months is forthcoming, but there is certainly a vast sum at issue The voluntary contributions included in this sum amounted to £6,192,883, while legacies accounted for £1,387,166, a fluctuating source of income designed in many cases to continue, by way of interest, the contribution of a dead supporter It should be noted that the number of the charities deriving their income from purely metropolitan sources, and expending it solely upon metropolitan cases, is comparatively small, but the number which, while located in the metropolis, derive their income from all parts of the kingdom, or afford assistance to applicants from all parts, is very large Both as a summary to the volume of charity and as a classified list of the institutions dispensing it, the book is a valuable one, while a full index makes reference easy The compilers are to be congratulated on their labours

HEALTH CONDITIONS IN BRUNEI

This State is situated between British North Borneo and Sarawak, and is 770 nautical miles distant from Singapore It consists of an area of about 2500 square miles containing a population of some 27,000 In 1885 the Sultan agreed that Great Britain should control his foreign relations and in 1905 under a further agreement a British Resident was appointed to advise and assist in the administration of the State Mr E E F Pretty the present Resident, has just furnished to the Colonial Office his report for the year 1925 In the Medical Section it is stated that the general death-rate was lower than in the previous year, though the infantile mortality stood at 314 2 per mille as against 303 9 in 1924 The ratio of births to infantile deaths was 3 18 to 1 The general death-rate of 30 68 per mille showed a great improvement on the 1924 figures, and contrasted very favourably with the Labuan rate of 36 35 for 1925 All these figures tend to show that there must be a good general average of fair health amongst the inhabitants and apparently the principal disease is malaria Beyond a few cases of mumps and chicken-pox, no contagious diseases There were 1285 vaccinations in Brunei and the out-stations, as against 1026 in 1924, and these figures contrasted with 903 births in 1925 and 1099 in 1924, tend to show that the younger generation should be well protected against small-pox Dr H W Furnivall medical officer of Labuan, acted as medical officer of Brunei throughout the year, and paid in all 18 visits Sixty-four cases from Brunei territory were treated in Labuan Hospital A total of 2748 were treated in the Brunei Government Dispensary and out-stations, as against 2520 in 1924, most of these cases were among Government servants, police, and prisoners, and the nature of the diseases was chiefly of a trivial character The following is a comparative table of the principal diseases treated in 1924 and 1925 —

	1924	1925
Malaria .	215	204
Diarrhœa	64	78
Constipation	118	146
Bronchitis	89	110
Round worms .	50	70

There were 37 Europeans resident on the average in the State, and they enjoyed good health, though malaria claimed some victims in the out-stations One European child was born during the year 1925 was remarkable for its phenomenal rainfall, a maximum of 12 inches in the 24 hours and a total of 213 inches for the year being recorded on Labu estate In Brunei town it rained on 226 days out of the 365

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The attack can be divided into two stages the first consists of clonic movements, sometimes preceded or accompanied by tonic spasm These clonic movements frequently spread so slowly and *remain limited* to one segment so long that it is possible to study them carefully They consist of brisk tetanic contractions of all the muscles that cooperate in the movement, when it is flexion of the elbow, for instance, the brachialis *anticus*, supinator longus, and often the long flexors of the wrist and fingers contract as well as the biceps In the clonic stages there seems to be always a relaxation of the antagonist muscles, of the *triceps*, for example when the elbow flexes An interesting observation which I have been able to make repeatedly is that if the limb which is in clonic spasm is moved passively into the extreme *position* to which the clonically contracting muscles would bring it, the spasm ceases in these muscles and spreads to another set, generally to their antagonists If, for instance, while there is

The first, a man of middle age, was well in every respect until about two months before I saw him. Then one day, while sitting at home, he suddenly got a numb tingling feeling in his right great toe and on the inner aspect of the front of this foot. The tingling spread, at first slowly to his other toes, and then more rapidly up the leg reaching almost as high as the groin As the tingling progressed up his leg it diminished gradually in his foot and toes, leaving behind it a numbness, and probably an actual loss of sensation, which persisted nearly an hour. He had later a large number of similar seizures, all of which began similarly with tingling in the right great toe. In some the paræsthesiæ were limited to the leg in others they spread up the right side of his trunk, and on reaching the shoulder passed down the arm to his fingers In a few of the severer attacks he lost consciousness In the slighter seizures there was nothing resembling clonic involuntary spasms, but the patient often moved the limb or "squirmed it about" in a purposive manner. as if to relieve the disagreeable sensations True clonic spasms of the leg did, however occur in some of the attacks, due probably to spread of the discharge of the motor cortex. As he had other symptoms of a cerebral tumour he was operated upon and a growth was found beneath but close to the cortex of the upper parietal lobule. Its position here explains the onset of paræsthesiæ in his foot, while the anatomical arrangement of the sensory foci for the different segments of the limbs determined the mode of its spread

The second case was one of gunshot injury over the lower part of the right parietal lobe The patient was an intelligent man and gave a clear account of his symptoms Immediately after the wound there was a considerable degree of weakness and of sensory disturbance on his left side, chiefly in the arm, but these had disappeared leaving only slight defects of the sense of position and of localisation in his left hand. Since the infliction of the wound he has been subject to left-sided attacks, which have become less severe and less frequent. They always begin with a tingling in the left two middle fingers which gradually extends to the other fingers covers the whole hand and slowly ascends the forearm generally stopping at the elbow but occasionally reaching the shoulder In some attacks tingling in the left side of his face sets in soon after it appears in the fingers, but it is never so intense as in his hand. No involuntary movements of the limb occur, but as the tingling spreads and becomes more intense the hand grows weak or even powerless

This stage of the attack may last up to 15 minutes but it is generally shorter in duration. It is followed by a "deadness" and "loss of feeling" in the hand and forearm, and on one occasion when I was able to examine him at this stage, I found complete loss of the sense of position in the limb, as well as great reduction of all forms of cutaneous sensibility up to the elbow. This gradually diminished from the elbow downwards, finally disappearing from the fingers in about half an hour.

In this case the periodic discharges commencing by excitation of that portion of the sensory cortex where the fingers are represented always spread up the post-central gyrus to the level of the representation of the elbow or shoulder, and sometimes down it into the facial area. Further, as in all such severe attacks the paræsthesiæ were followed by actual loss of sensation As Sittig has pointed out recently, the paræsthesiæ do not always spread from part to part in an order which corresponds strictly to the arrangement of the cortical representations of these parts, but this is true of some Jacksonian motor attacks too.

The post-paroxysmal loss of sensation presents many features of interest. Some years ago I saw a case with severe left-sided sensory epilepsy in which it was possible to study it carefully The attacks always began with tingling in the left arm sometimes so intense as to be actually painful and then spread slowly to the shoulder down the trunk, and into the left leg. In some of the attacks clonic convulsions of the same distribution occurred but they always followed the tingling As the paræsthesiæ spread to each segment of the limb sensation in it became dulled and finally disappeared so that when the active phase of the attack was over the whole of the left limbs and that side of the trunk and face to a lesser degree were completely anæsthetic to all stimuli Sensation returned slowly and in the same manner after each attack I observed First the anæsthesia began to recede from the middle line of the trunk towards the roots of the limbs in the limbs cutaneous sensation returned gradually from the shoulder and hip towards the hand and foot One surprising fact which I repeatedly observed in other cases too was that in the limbs the upper level of the anæsthesia was usually sharp. corresponding roughly to a circular line around the limb; at one moment, for instance. it might be limited above by a line around the elbow. and some minutes later by one equally sharp around the middle of the forearm.

These observations bring out some points of interest. In the first place there is no definite evidence that the representation of the limbs in the sensory cortex corresponds to their anatomical segments; though in cortical hemiplegia there may be a greater disturbance of sensation in the hand and foot than in the arm or thigh observations on the effects of destructive lesions of the cortex certainly never reveal such a sharp limit of the anæsthesia as is found after epileptiform seizures. In the second place. forms of sensation are lost with which the cortex has little or nothing to do. There may be, for example. total cutaneous analgesia or thermanæsthesia for a time, though the perception of pain and temperature is possible when the whole sensory cortex has been destroyed. We must consequently assume that physiological disturbances, which we may here again attribute to exhaustion of the grey matter. affects subcortical centres too in this case probably the optic thalmus.

A few patients subject to focal sensory epilepsy have informed me that occasionally, and apparently independently of the characteristic attacks the part usually involved by the *paræsthesiæ may suddenly* become numb or "dead." in other words. anæsthetic. In a woman with the symptoms of a tumour of the right parietal lobe, a sudden but transient loss of sensation in her left hand was one of the most prominent symptoms; I have not, however. had the opportunity of examining any patient while this disturbance was present. It is therefore obvious that focal sensory epileptic seizures present many close analogies with Jacksonian motor attacks They begin locally and the spread of the sensory phenomena that constitutes them is determined by the topographical arrangement in the cortex of the representation of different segments of the body; they are usually followed by loss of sensation and may be occasionally replaced by transient anæsthesia

VISUAL EPILEPSY.

Attacks to which this term may be applied have been frequently observed. They have been well described by Gowers. who in his last paper on the subject recorded two cases in which I was able to observe the patients during several attacks Since the war there have been more opportunities of investigating such attacks

The cortical visual centres lie around the calcarine fissures, that in each hemisphere corresponding to the homonymous halves of the two retinæ and receiving therefore impressions from the opposite halves of the visual fields It is definitely determined too, that there is a detailed localisation in each cortical visual area, its posterior part corresponding to macular or central and its anterior part to peripheral vision, while the upper part of the area receives impressions from the lower part of the field and the lower from the upper. Perceptions due to the irritation of any part of the visual cortex are projected to the corresponding point in the field of vision and consequently if the discharge spreads over the cortex the phenomena perceived appear to the patient to move through the opposite half of the binocular field of vision

This can be illustrated by one of Gowers cases in which I was able to observe the patient during many attacks, some of which lasted ten minutes or longer They commenced with the appearance of several small spheres, white in the centre with an intermediate zone of blue and outside this a ring of red, immediately to the left of the point at which the patient gazed, from here they moved either at a uniform rate or in jerks to the left and downwards. As the patient remained conscious during the attacks he was able to indicate the position to which he referred them. When the spectra passed further from the fixation point the colours disappeared from them Almost immediately after their appearance vision in the left halves of the fields became dim and the loss quickly amounted to a left complete hemianopia which persisted for several minutes after the vigorous clonic flexion of the forearm, the elbow be flexed as far as possible, the spasm may at once shift to its extensors This may be due to the new position altering the relative excitability of the cortical flexor and extensor points, Sherrington has pointed out how unstable these points are, and we shall find later that peripheral stimuli can influence the reactions excited from them

The second stage is one of motor paresis following the clonic movements This may vary in degree and duration, occasionally it is slight and transient, but when the spasms have been severe no volitional movement may be possible for a considerable time, even hours may elapse before power returns Jackson, who observed this post-epileptic paresis in some of his earlier cases, accepted Todd's explanation that it is due to exhaustion of the cortical grey matter, a hypothesis that is now generally accepted The paralysis is always flaccid and is accompanied by exaggerated reflexes, and by Babinski's sign if the leg is involved

An interesting fact not generally recognised, is that convulsive attacks are occasionally replaced by other manifestations, the most common of which is a sudden but transient paresis of that portion of the limb which in other attacks is involved in the clonic spasms Usually the primary paresis appears in the part in which the spasms commence, but it may affect another region the cortical representation of which is adjacent to the site of discharge, in a case recorded by Hughlings Jackson, for instance, clonic movements of the face were immediately followed by paralysis of the hand of the same side The following case is a good example of one in which at times defect or negative symptoms only occurred

Case 1 —The patient received a gunshot wound of his head in the region of the posterior end of the second left frontal convolution Some months after being wounded he began to have epileptiform seizures of the Jacksonian type All began with a clonic flexion of the right thumb and fingers, particularly of the index and medius Within a few seconds all the fingers were involved in clonic flexion spasms, which then spread to the wrist, and later to the elbow Many attacks ended at this stage, but in others the arm was abducted and protracted at the shoulder, the clonic twitching extended to the right side of his face, and jerked his head and eyes to the right Each attack was followed by weakness of the right fingers and wrist which, according to his own story, varied with the severity and duration of the clonic spasms No numbness, tingling, or other sensory disturbance accompanied the clonic movements

Sometimes, however, attacks occurred in which there were neither tonic nor clonic spasms, or movements of any kind, he simply lost power suddenly and without any warning in the hand If reading, his book might fall unexpectedly, or his cane might drop from his hand as he walked The loss of power was complete for a time, but after a few minutes voluntary movement returned and gradually reached the normal

I have seen several other patients with Jacksonian motor epilepsy who were subject to similar sudden transient palsies of the limb or segment of the limb in which at other times the convulsion commenced The immediate cause of this palsy is doubtful Higier, who described one case, suggests that in certain circumstances the cortical inhibition of the antagonists may predominate over the excitation It is difficult to explain it by this hypothesis; it seems more likely that it is due to a primary inhibition instead of waves of excitation spreading over the cortical motor elements, a change perhaps similar to that which causes loss of consciousness in epilepsy and the sudden relaxations of the muscles leading to "falls," which often occur in it

Such observations show that a local lesion producing a functional instability of part of the so-called motor cortex of the brain may, in addition to predisposing to local epileptiform phenomena, which are frequently followed by temporary loss of power in the convulsed part, be the immediate cause of such negative symptoms as a primary transient paralysis of regions of the body represented in its neighbourhood

The cortical mechanisms of speech are frequently involved in right-sided epileptiform seizures but invariably, I believe in a negative manner This is an important point, as it suggests that the functions of the more highly evolved cerebral mechanisms are arrested by factors which produce positive symptoms in less highly evolved mechanisms In epilepsy the stream of consciousness is similarly arrested In such seizures, as in general epileptic convulsions, the patient may emit an inarticulate cry or groan, but never a word or a series of sounds that can be regarded as symbols of thought, or which suggest in any way the expression of an emotion or idea In many instances these sounds are due to forcible expiration or inspiration through the closed glottis On the other hand, a complete or partial aphasia may accompany or follow the seizure This aphasia is usually so transient that it is scarcely possible to analyse it fully even when the opportunity of observing it is offered Sometimes the main difficulty is the utterance of words, but in other cases comprehension of speech and evocation of correct words to reply to a question or to express an idea are disturbed

I have recently had several opportunities of observing such a temporary aphasia in a lady in whom a left-sided temporal tumour was removed four years ago She has been recently subject to numerous epileptiform seizures, in many of which consciousness is not lost These attacks often commence with a disgusting smell and an unpleasant taste, then she passes into an abnormal mental state similar to Jackson's "dreamy state," and the right side of her face may twitch Though she remains conscious speech is completely lost from the commencement of the attack, questions and other stimuli evoke no response As the attack passes off she utters unintelligible jargon sounds and during the succeeding few minutes uses wrong words to express herself The speech returns gradually and is normal again in from three to five minutes During part of the attack she is unable to comprehend spoken speech

Focal Sensory Epilepsy

Focal sensory epilepsy has attracted less notice, perhaps since it is less commonly met with, but mainly because it does not present itself in such a striking and dramatic form to the observer, for it consists of purely subjective symptoms It is not, however, rare, especially since the war has given us a large number of men with gunshot wounds of the head involving the sensory cortex

Our knowledge of the limits and extent of the sensory cortex is less definite than of those of the motor area, but clinical observations, which are supported at least by experimental work, go to show that it lies wholly behind the fissure of Rolando It is possible that the recognition of the position of our limbs in space may be partly subserved by the precentral cortex, but this is certainly not concerned with any other form of sensation The occipitalward limit of the sensory area is still undetermined, but it probably extends as far as the supramarginal gyrus. That there is a localisation in the sensory cortex analogous to the motor localisation in the precentral area there can be no doubt; the lower limb is represented at and around the apex of the hemisphere, and the trunk, arm, and head in this order below it This anatomical arrangement of the sensory representation of different parts of the body determines the mode of spread of the sensory phenomena which are excited by local irritation of the cortex and projected to the surface

These vary in nature, but are generally described by the patient as numbness or tingling, or occasionally as a "deadness" or loss of feeling These are all positive symptoms, by which I mean phenomena added to the normal state and due directly to over activity of the corresponding parts of the cortex This is generally true even of those sensations described by the patient as "deadness" or "loss of feeling," these being merely alternative terms for numbness which is a positive phenomenon A much rarer symptom is a sensation of movement, then the patient has the feeling that a part of the body, generally a segment of a limb, has moved in some definite direction although there has been actually no displacement of that part As far as I am aware, there is never the illusion of more complicated acts

Two cases I have recently seen illustrate more common forms of focal sensory epilepsy

The first, a man of middle age, was well in every respect until about two months before I saw him Then one day, while sitting at home, he suddenly got a numb tingling feeling in his right great toe and on the inner aspect of the front of this foot The tingling spread, at first slowly to his other toes, and then more rapidly up the leg, reaching almost as high as the groin As the tingling progressed up his leg it diminished gradually in his foot and toes, leaving behind it a numbness, and probably an actual loss of sensation, which persisted nearly an hour He had later a large number of similar seizures, all of which began similarly with tingling in the right great toe In some the paræsthesiæ were limited to the leg, in others they spread up the right side of his trunk, and on reaching the shoulder passed down the arm to his fingers In a few of the severer attacks he lost consciousness In the slighter seizures there was nothing resembling clonic involuntary spasms, but the patient often moved the limb, or "squirmed it about," in a purposive manner, as if to relieve the disagreeable sensations True clonic spasms of the leg did, however, occur in some of the attacks, due probably to spread of the discharge of the motor cortex As he had other symptoms of a cerebral tumour he was operated upon and a growth was found beneath but close to the cortex of the upper parietal lobule Its position here explains the onset of paræsthesiæ in his foot, while the anatomical arrangement of the sensory foci for the different segments of the limbs determined the mode of its spread

The second case was one of gunshot injury over the lower part of the right parietal lobe The patient was an intelligent man and gave a clear account of his symptoms Immediately after the wound there was a considerable degree of weakness and of sensory disturbance on his left side, chiefly in the arm, but these had disappeared leaving only slight defects of the sense of position and of localisation in his left hand Since the infliction of the wound he has been subject to left-sided attacks, which have become less severe and less frequent They always begin with a tingling in the left two middle fingers which gradually extends to the other fingers, covers the whole hand, and slowly ascends the forearm, generally stopping at the elbow but occasionally reaching the shoulder In some attacks tingling in the left side of his face sets in soon after it appears in the fingers, but it is never so intense as in his hand No involuntary movements of the limb occur, but as the tingling spreads and becomes more intense the hand grows weak or even powerless This stage of the attack may last up to 15 minutes, but it is generally shorter in duration It is followed by a "deadness" and "loss of feeling" in the hand and forearm, and on one occasion when I was able to examine him at this stage, I found complete loss of the sense of position in the limb, as well as great reduction of all forms of cutaneous sensibility up to the elbow This gradually diminished from the elbow downwards, finally disappearing from the fingers in about half an hour

In this case the periodic discharges, commencing by excitation of that portion of the sensory cortex where the fingers are represented, always spread up the post-central gyrus to the level of the representation of the elbow or shoulder, and sometimes down it into the facial area Further, as in all such severe attacks, the paræsthesiæ were followed by actual loss of sensation As Sittig has pointed out recently, the paræsthesiæ do not always spread from part to part in an order which corresponds strictly to the arrangement of the cortical representations of these parts, but this is true of some Jacksonian motor attacks too

The post-paroxysmal loss of sensation presents many features of interest Some years ago I saw a case with severe left-sided sensory epilepsy in which it was possible to study it carefully The attacks always began with tingling in the left arm, sometimes so intense as to be actually painful, and then spread slowly to the shoulder, down the trunk, and into the left leg In some of the attacks clonic convulsions of the same distribution occurred, but they always followed the tingling As the paræsthesiæ spread to each segment of the limb sensation in it became dulled and finally disappeared, so that when the active phase of the attack was over the whole of the left limbs and that side of the trunk and face to a lesser degree, were completely anæsthetic to all stimuli Sensation returned slowly and in the same manner after each attack I observed First the anæsthesia began to recede from the middle line of the trunk towards the roots of the limbs, in the limbs cutaneous sensation returned gradually from the shoulder and hip towards the hand and foot One surprising fact which I repeatedly observed in other cases too was that in the limbs the upper level of the anæsthesia was usually sharp, corresponding roughly to a circular line around the limb, at one moment, for instance, it might be limited above by a line around the elbow, and some minutes later by one equally sharp around the middle of the forearm

These observations bring out some points of interest In the first place, there is no definite evidence that the representation of the limbs in the sensory cortex corresponds to their anatomical segments, though in cortical hemiplegia there may be a greater disturbance of sensation in the hand and foot than in the arm or thigh, observations on the effects of destructive lesions of the cortex certainly never reveal such a sharp limit of the anæsthesia as is found after epileptiform seizures In the second place, forms of sensation are lost with which the cortex has little or nothing to do There may be, for example, total cutaneous analgesia or thermanæsthesia for a time, though the perception of pain and temperature is possible when the whole sensory cortex has been destroyed We must consequently assume that physiological disturbances, which we may here again attribute to exhaustion of the grey matter, affects subcortical centres too, in this case probably the optic thalmus

A few patients subject to focal sensory epilepsy have informed me that occasionally, and apparently independently of the characteristic attacks, the part usually involved by the paræsthesiæ may suddenly become numb or "dead," in other words, anæsthetic In a woman with the symptoms of a tumour of the right parietal lobe, a sudden but transient loss of sensation in her left hand was one of the most prominent symptoms, I have not, however, had the opportunity of examining any patient while this disturbance was present It is therefore obvious that focal sensory epileptic seizures present many close analogies with Jacksonian motor attacks They begin locally and the spread of the sensory phenomena that constitutes them is determined by the topographical arrangement in the cortex of the representation of different segments of the body, they are usually followed by loss of sensation, and may be occasionally replaced by transient anæsthesia

VISUAL EPILEPSY

Attacks to which this term may be applied have been frequently observed They have been well described by Gowers, who in his last paper on the subject recorded two cases in which I was able to observe the patients during several attacks Since the war there have been more opportunities of investigating such attacks

The cortical visual centres lie around the calcarine fissures, that in each hemisphere corresponding to the homonymous halves of the two retinæ and receiving therefore impressions from the opposite halves of the visual fields It is definitely determined, too, that there is a detailed localisation in each cortical visual area, its posterior part corresponding to macular or central and its anterior part to peripheral vision, while the upper part of the area receives impressions from the lower part of the field and the lower from the upper. Perceptions due to the irritation of any part of the visual cortex are projected to the corresponding point in the field of vision, and consequently if the discharge spreads over the cortex the phenomena perceived appear to the patient to move through the opposite half of the binocular field of vision

This can be illustrated by one of Gowers' cases in which I was able to observe the patient during many attacks, some of which lasted ten minutes or longer They commenced with the appearance of several small spheres, white in the centre with an intermediate zone of blue and outside this a ring of red, immediately to the left of the point at which the patient gazed, from here they moved either at a uniform rate or in jerks to the left and downwards As the patient remained conscious during the attacks he was able to indicate the position to which he referred them When the spectra passed further from the fixation-point the colours disappeared from them. Almost immediately after their appearance vision in the left halves of the fields became dim and the loss quickly amounted to a left complete hemianopia which persisted for several minutes after the attacks ceased, then disappearing gradually from the centre towards the periphery

In all attacks the eyes deviated towards the left and the head turned in the same direction as soon as the visual spectra appeared This deviation of the eyes and head was at first tonic but later became clonic, it could be controlled to some extent by the patient In some of the attacks at least it was probably secondary to the visual spectra, the gaze being directed reflexly towards the point in space to which the spectra were projected This man had in all probability a cerebral tumour, but its position in the brain was not determined Gowers assumed that the symptoms were due to a lesion in the neighbourhood of the angular gyrus

Gowers records in the same lecture another case, that of a girl, aged 9, who was under my observation for some years She had been, since receiving an injury to her head at the age of 3½ years, subject to right-sided epileptiform attacks most of which began with the appearance of a bright light in the right halves of her visual fields, which she spoke of as "twinkles," probably because it scintillated Frequently there were colours in it As soon as it appeared she invariably brought her hand to the outer side of her right eye "to rub it away" Her head and eyes turned *slowly to the right, she lost consciousness, and developed* tonic and clonic spasms in her right limbs On regaining consciousness there was a defect of vision in each eye to the right of the fixation-point, occasionally a complete hemianopia which cleared up quickly Mr Sargent discovered a cyst, probably the result of a traumatic hæmorrhage, in the left angular gyrus, but it is possible that there were other lesions nearer the calcarine area

Similar attacks of visual epilepsy have been frequently observed in men who had received gunshot wounds in the occipital region Several such cases informed me that some time after the infliction of the wound, or on regaining consciousness after it, they saw light or stars though they were often temporarily blind A study of visual phenomena associated with the later stages of such wounds is more instructive

One of my patients was wounded over the pole of the right occipital lobe in 1916, as a result of which he has still a small left-sided paracentral scotoma, chiefly in the upper quadrants Since being wounded he has been subject to fits, all of which begin with flashes of light to the left of his fixation-point, apparently just outside the scotoma He describes the flashes as "shell bursts" or "balls of fire but redder than any fire," which dance about to his left, then vision to his left becomes hazy, everything seems to be receding into the distance, his left arm and later his left leg become numb and he loses consciousness On one occasion on which I was able to examine him immediately after a seizure there was for a time a left-sided hemianopia

In another man with a similar wound near the right occipital pole, the fits began with the appearance of very "bright lights of all colours" in the left of the point on which the eyes were directed They grew brighter and brighter until he lost consciousness He exteriorised these visual sensations so vividly that on a few occasions he assaulted nurses who came to his assistance, as he thought they were "flashing those lights in front of my eyes"

In a third man, who had a piece of metal embedded near the anterior end of the left calcarine fissure, the epileptiform attacks commenced with the appearance of a dull black patch which he referred to the lower part of the outer canthus of his right eye Next flashes of lightning appeared in the same place and often persisted for 10–15 minutes Simultaneously, or somewhat later in the severer attacks, his right limb became numb and powerless and he lost consciousness

I have observed a large number of similar cases, in all of which the traumatic lesion lay near and frequently injured the calcarine visual area There seems, therefore, little doubt that these relatively simple and crude visual phenomena must be attributed to a discharge spreading over the receptive visual cortex I have never seen them occur as primary phenomena in epileptiform seizures due to injury or disease of other portions of the brain They may obviously result from discharges spreading back to the occipital cortex from the parietal or temporal lobes, but then they are preceded by motor or sensory auræ

It is probable that purely negative phenomena may occur in patients subject to visual epilepsy, one man with a gunshot wound of the right occipital region informed me that while reading he sometimes lost his sight to his left side, and another, also with a right occipital injury, that while in a cinema he suddenly became unable to see to his left, but I have not had an opportunity of examining a patient during temporary primary hemianopia

It is evident that irritation of the primary visual receptive area in the cortex produces symptoms closely analogous to those that result from similar excitations of the motor and sensory cortex—that is simple phenomena which are projected into and often move through space, followed by loss of vision in the area they occupied, and sometimes replaced by a primary loss of vision

Complex or highly organised subjective visual sensations do not result directly from lesions of the occipital cortex Such have however, been described in association with local cerebral lesions and repeatedly with such as had involved part of the cerebral visual system These are not, however comparable to the phenomena which we are considering here In some cases of hemianopia due to destruction of either the optic radiations or of the visual cortex, the patient states that he "sees something present in the blind area of the field, some describe it as a "something" there, others state it resembles a familiar object, usually of simple form, in other cases it is identified with a human figure, but its presentation is always vague and its character so indefinite that it cannot be distinguished as anything known Whatever form it takes, it *generally persists a long time usually* until the patient's attention is diverted These visual appearances are similar in nature to the hallucinations or imaginary visions which are not uncommon in the blind, especially those who have lost sight from disease of the optic nerves or tracts

More complicated subjective visual phenomena are frequently associated, as Hughlings Jackson originally pointed out, with local lesions in the neighbourhood of the uncus of the temporal lobe, but they are different in origin and nature to those we are studying I refer to them here only for purpose of contrast

These uncinate epileptic seizures frequently begin with subjective smells and tastes which are almost invariably of an unpleasant, usually of an extremely disagreeable, character, often there is, too, an epigastric sensation which may amount to actual nausea Then comes that peculiar mental state which Jackson called the "dreamy state" or "intellectual aura," *characterised by a feeling of* unreality of the present or of familiarity with the events of the moment as though they had been experienced before Often visions which the patient associates with the past come up A patient whom I had under observation always saw, in this stage a woman with a red cloak approaching nearer and nearer until, as the spectre reached her, she lost consciousness In other cases, the vision may be a scene tinted with a tone of familiarity, a building or a similar object In such cases the visual hallucinations, for to these the term hallucination can be applied, is only part of the intellectual aura of Jackson and is obviously the result of more complicated cerebral and psychological processes than the perception and projection of lights or colours

It is difficult to suggest why it is only from the temporal lobe, and generally only by lesions involving directly or indirectly the olfactory (and probably the gustatory) centre in the uncinate gyrus, that these complex mental states with highly organised visual phenomena are excited, possibly the explanation may be found in the fact that this region of the brain, which belongs to the rhinencephalon, represents the phylogenetically *oldest* portion of the cerebral cortex, and that even in man it still serves as a storehouse of simple memories and associations

Auditory Epilepsy.

The only other sense discharges excited by focal irritation of the brain that may usher in or even constitute an epileptic attack are subjective sounds or other auditory phenomena These are relatively rare and in nature less striking and characteristic than the motor, sensory, visual, and even than the olfactory and gustatory phenomena, to which I have already referred

I have met some interesting examples of this phenomenon A man, who during the war had received a penetrating gunshot wound in the right side of his head, later became subject to epileptic fits Most of these began with a sound like the ringing of a bell in or outside his left ear This noise became louder and louder until he lost consciousness In many of the later attacks, however, there was no loss of consciousness, and only local convulsions beginning with turning of the head and eyes towards the left I have never the opportunity of observing one of these seizures or examining him immediately after one, but the patient, who was an intelligent man, never noticed any loss or disturbance of hearing at the end of either a local or general attack The explanation is that neither cortical auditory area receives exclusively impressions from either ear, and therefore even complete functional paralysis of one does not produce any obvious defect of hearing in either ear.

These various epileptiform phenomena, all of which are characterised by continuous (tonic) and intermittent (clonic) manifestations which spread over the body, or are projected through space in a manner determined by the anatomical representation in the brain of the parts of the body and of relative space around it, result directly from what we may still, following Hughlings Jackson, call a " discharge " in the cerebral cortex Both clinical and experimental evidence is strongly in favour of this view ; physiological experiments show that though movements and probably sensations may be excited by electrical and other forms of stimulation of the white matter, these do not outlast the stimulation, they do not tend to spread and are not followed by any evidence of exhaustion or facilitation, all of which may be seen on stimulation of the cortex, and observed in epileptiform attacks arising from it

Two factors are necessary that attacks may occur ; an adequate state of excitability of the cortex and a structural lesion or state of functional instability which predisposes to a discharge in it Jackson regarded the discharging lesion as a fulminate which may explode neighbouring or associated healthy nervous mechanisms The actual nature of the lesion has probably little influence, though one that increases slowly in extent and severity is usually more effective than one that is stationary. It is not necessary that the lesion actually involves the region of the cortex in which the discharge is excited , it is frequently effective if it merely lies in its proximity When, however, it does extend into the discharging cortex, it is essential that it does not destroy its anatomical integrity, or interfere seriously with its functional capacity

It is probable that the presence of a lesion in the neighbourhood of the cortex raises its excitability in addition to acting as a discharging focus , it may be, in fact, wholly to this raised excitability and instability that the discharges are due, for it has been shown experimentally that if in animals a part of the motor cortex is damaged by incisions, corrosive fluids, or other means, convulsions may be excited from it or its neighbourhood by much smaller doses of strychnine and cocaine than are effective in the intact animal The level of cortical excitability may be of course influenced by other factors , we know, for instance, that alcohol, excitement, and in ordinary epilepsy possibly disturbances in the endocrine functions, increase the liability to attacks, while it can be diminished by certain drugs, as bromides

Influence of Peripheral Stimuli

An interesting matter that has received little attention is the influence of peripheral stimuli in exciting local attacks in that part of the body that is stimulated Many patients subject to Jacksonian epilepsy commencing in one hand, for instance, are careful to shield this hand from injury or stimulation of any kind, and they frequently attribute a seizure to some irritation or accident to it Thus evidence may not carry much weight, since it is the way of all patients to find an obvious explanation of their symptoms Some years ago, when investigating with Sir H Head the disturbances of sensation produced by cortical lesions, I was struck by the fact that during the prolonged examination of tactile and other forms of cutaneous sensibility over one hand, Jacksonian spasms occasionally commenced in this part in patients with cortical lesions not subject to frequent attacks Some patients recognising this were reluctant to submit to examination. I have frequently repeated this experiment since, and have been able, in certain cases, to induce typical local spasms in a hand or foot by repeated stimulation of it The most effective means is usually a long or regular series of tactile contacts with a wisp of cotton-wool, a camel's hair brush, or von Frey's hairs The attack induced usually commences with a few clonic movements, or a curious purposeless restlessness, and may extend no further if the stimulation is stopped ; sometimes, however, they spread and may involve the whole of one side of the body These movements start almost invariably in the part that is being tested ; I have seen them more frequently elicited in the hand and fingers than elsewhere, probably because it is here that sensation is usually subjected to the most searching examination As long ago as 1863 Hughlings Jackson described a case in which touching the thumb would sometimes bring on a fit, and later another case in which seizures followed testing for ankle-clonus He also cites an observation of Brissaud's that percussion of the patellar tendon excited local epileptic attacks

In a few cases no movements occur, at least as primary phenomena, but the patient complains that the stimuli employed have suddenly excited in the area tested a numbness, a tingling, or other paræsthesiæ, apparently identical with those that occur in sensory epilepsy. These may remain local or spread, and may or may not be followed by motor spasms I have seen one patient at least whose hand after a prolonged examination of sensation suddenly " went dead " and became so anæsthetic that further testing of sensation was impossible It is probable that the sudden variations in sensibility occasionally met during the examination of sensation in patients with lesions of a parietal lobe are due to a palsy of cortical function brought about by stimulation

I have also seen a few men with gunshot wounds in the neighbourhood of the motor cortex who asserted that long continued use of the hand of the side opposite to that on which the wound was tended to excite local spasms or seizures beginning in that hand. We have some experimental confirmation of this, for Sauerbruch found that if the paw of a monkey was flexed and extended passively.for a long period local spasms were excited in it by the injection of a dose of cocaine so small that it had no effect if the animal had been at rest, or if its paw had not been submitted to passive movement

Some men subject to epileptiform attacks commencing with visual phenomena owing to gunshot wounds of the occipital region have told me that bright lights, cinema exhibitions, and other strong retinal stimuli tend to bring on attacks Auditory stimuli may also excite attacks which commence with auditory auræ. A man who consulted me some time ago had been subject since an accident to his head to epileptic seizures which commence with a sound like the note of a high-pitched bell in his left ear ; he is convinced that any loud noise may bring on an attack, and has consequently given up his profession and retired to a quiet country place, where the seizures have been much less common And some months ago I saw in the National Hospital a woman, under the care of my colleague Dr. Risien Russell, who was subject to left-sided motor and sensory attacks, some of which commenced with a noise or a musical tune In her case, too, epileptiform attacks were brought on by loud noises Later a tumour was removed from her right temporal lobe

There is therefore a certain amount of evidence that the peripheral stimulation of a limb which is subject to motor or sensory epilepsy, or of a sense organ to which analogous phenomena are referred, may excite epileptic symptoms if the corresponding part of the cortex is in an unstable state The explanation is attacks ceased, then disappearing gradually from the centre towards the periphery

In all attacks the eyes deviated towards the left and the head turned in the same direction as soon as the visual spectra appeared This deviation of the eyes and head was at first tonic but later became clonic, it could be controlled to some extent by the patient In some of the attacks at least it was probably secondary to the visual spectra, the gaze being directed reflexly towards the point in space to which the spectra were projected This man had in all probability a cerebral tumour, but its position in the brain was not determined Gowers assumed that the symptoms were due to a lesion in the neighbourhood of the angular gyrus

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In a third man, who had a piece of metal embedded near the anterior end of the left calcarine fissure, the epileptiform attacks commenced with the appearance of a dull black patch which he referred to the lower part of the outer canthus of his right eye Next flashes of lightning appeared in the same place and often persisted for 10–15 minutes Simultaneously, or somewhat later in the severer attacks, his right limb became numb and powerless and he lost consciousness

I have observed a large number of similar cases, in all of which the traumatic lesion lay near and frequently injured the calcarine visual area There seems, therefore, little doubt that these relatively simple and crude visual phenomena must be attributed to a discharge spreading over the receptive visual cortex I have never seen them occur as primary phenomena in epileptiform seizures due to injury or disease of other portions of the brain They may obviously result from discharges spreading back to the occipital cortex from the parietal or temporal lobes, but then they are preceded by motor or sensory auræ.

It is probable that purely negative phenomena may occur in patients subject to visual epilepsy, one man with a gunshot wound of the right occipital region informed me that while reading he sometimes lost his sight to his left side, and another, also with a right occipital injury, that while in a cinema he suddenly became unable to see to his left, but I have not had an opportunity of examining a patient during temporary primary hemianopia

It is evident that irritation of the primary visual receptive area in the cortex produces symptoms closely analogous to those that result from similar excitations of the motor and sensory cortex—that is simple phenomena which are projected into and often move through space, followed by loss of vision in the area they occupied, and sometimes replaced by a primary loss of vision

Complex or highly organised subjective visual sensations do not result directly from lesions of the occipital cortex Such have however, been described in association with local cerebral lesions and repeatedly with such as had involved part of the cerebral visual system These are not, however comparable to the phenomena which we are considering here In some cases of hemianopia due to destruction of either the optic radiations or of the visual cortex, the patient states that he "sees something present in the blind area of the field some describe it as a "something" there, others state it resembles a familiar object, usually of simple form, in other cases it is identified with a human figure, but its presentation is always vague and its character so indefinite that it cannot be distinguished as anything known Whatever form it takes, it generally persists a long time usually until the patient's attention is diverted These visual appearances are similar in nature to the hallucinations or imaginary visions which are not uncommon in the blind, especially those who have lost sight from disease of the optic nerves or tracts

More complicated subjective visual phenomena are frequently associated, as Hughlings Jackson originally pointed out, with local lesions in the neighbourhood of the uncus of the temporal lobe, but they are different in origin and nature to those we are studying I refer to them here only for purpose of contrast

These uncinate epileptic seizures frequently begin with subjective smells and tastes, which are almost invariably of an unpleasant, usually of an extremely disagreeable, character, often there is, too, an epigastric sensation which may amount to actual nausea Then comes that peculiar mental state which Jackson called the "dreamy state" or "intellectual aura," characterised by a feeling of unreality of the present or of familiarity with the events of the moment as though they had been experienced before Often visions which the patient associates with the past come up A patient whom I had under observation always saw, in this stage a woman with a red cloak approaching nearer and nearer until, as the spectre reached her, she lost consciousness In other cases, the vision may be a scene tinted with a tone of familiarity, a building or a similar object In such cases the visual hallucinations, for to these the term hallucination can be applied, is only part of the intellectual aura of Jackson and is obviously the result of more complicated cerebral and psychological processes than the perception and projection of lights or colours

It is difficult to suggest why it is only from the temporal lobe, and generally only by lesions involving directly or indirectly the olfactory (and probably the gustatory) centre in the uncinate gyrus, that these complex mental states with highly organised visual phenomena are excited, possibly the explanation may be found in the fact that this region of the brain, which belongs to the rhinencephalon, represents the phylogenetically oldest portion of the cerebral cortex, and that even in man it still serves as a storehouse of simple memories and associations

AUDITORY EPILEPSY

The only other sense discharges excited by focal irritation of the brain that may usher in or even constitute an epileptic attack are subjective sounds or other auditory phenomena These are relatively rare and in nature less striking and characteristic than the motor, sensory, visual, and even than the olfactory and gustatory phenomena, to which I have already referred

I have met some interesting examples of this phenomenon A man, who during the war had received a penetrating gunshot wound in the right side of his head, later became subject to epileptic fits Most of these began with a sound like the ringing of a bell in or outside his left ear. This noise became louder and louder until he lost consciousness In many of the later attacks, however, there was no loss of consciousness and only local convulsions beginning with turning of the head and eyes towards the left I have never the opportunity of observing one of these seizures or examining him immediately after one, but the patient, who was an intelligent man, never noticed any loss or disturbance of hearing at the end of either a local or general attack The explanation is that neither cortical auditory area receives exclusively impressions from either ear, and therefore even complete functional paralysis of one does not produce any obvious defect of hearing in either ear.

These various epileptiform phenomena, all of which are characterised by continuous (tonic) and intermittent (clonic) manifestations which spread over the body, or are projected through space in a manner determined by the anatomical representation in the brain of the parts of the body and of relative space around it, result directly from what we may still, following Hughlings Jackson, call a "discharge" in the cerebral cortex Both clinical and experimental evidence is strongly in favour of this view, physiological experiments show that though movements and probably sensations may be excited by electrical and other forms of stimulation of the white matter, these do not outlast the stimulation, they do not tend to spread and are not followed by any evidence of exhaustion or facilitation, all of which may be seen on stimulation of the cortex, and observed in epileptiform attacks arising from it

Two factors are necessary that attacks may occur; an adequate state of excitability of the cortex and a structural lesion or state of functional instability which predisposes to a discharge in it Jackson regarded the discharging lesion as a fulminate which may explode neighbouring or associated healthy nervous mechanisms The actual nature of the lesion has probably little influence, though one that increases slowly in extent and severity is usually more effective than one that is stationary. It is not necessary that the lesion actually involves the region of the cortex in which the discharge is excited, it is frequently effective if it merely lies in its proximity When, however, it does extend into the discharging cortex, it is essential that it does not destroy its anatomical integrity, or interfere seriously with its functional capacity

It is probable that the presence of a lesion in the neighbourhood of the cortex raises its excitability in addition to acting as a discharging focus, it may be, in fact, wholly to this raised excitability and instability that the discharges are due, for it has been shown experimentally that if in animals a part of the motor cortex is damaged by incisions, corrosive fluids, or other means, convulsions may be excited from it or its neighbourhood by much smaller doses of strychnine and cocaine than are effective in the intact animal The level of cortical excitability may be of course influenced by other factors, we know, for instance, that alcohol, excitement, and in ordinary epilepsy possibly disturbances in the endocrine functions, increase the liability to attacks, while it can be diminished by certain drugs, as bromides

INFLUENCE OF PERIPHERAL STIMULI

An interesting matter that has received little attention is the influence of peripheral stimuli in exciting local attacks in that part of the body that is stimulated Many patients subject to Jacksonian epilepsy commencing in one hand for instance, are careful to shield this hand from injury or stimulation of any kind, and they frequently attribute a seizure to some irritation or accident to it Thus evidence may not carry much weight, since it is the way of all patients to find an obvious explanation of their symptoms Some years ago, when investigating with Sir H Head the disturbances of sensation produced by cortical lesions, I was struck by the fact that during the prolonged examination of tactile and other forms of cutaneous sensibility over one hand, Jacksonian spasms occasionally commenced in this part in patients with cortical lesions not subject to frequent attacks Some patients recognising this were reluctant to submit to examination. I have frequently repeated this experiment since, and have been able, in certain cases, to induce typical local spasms in a hand or foot by repeated stimulation of it The most effective means is usually a long or regular series of tactile contacts with a wisp of cotton-wool, a camel's hair brush, or von Frey's hairs The attack induced usually commences with a few clonic movements, or a curious purposeless restlessness, and may extend no further if the stimulation is stopped; sometimes, however, they spread and may involve the whole of one side of the body. These movements start almost invariably in the part that is being tested; I have seen them more frequently elicited in the hand and fingers than elsewhere, probably because it is here that sensation is usually subjected to the most searching examination. As long ago as 1863 Hughlings Jackson described a case in which touching the thumb would sometimes bring on a fit, and later another case in which seizures followed testing for ankle-clonus He also cites an observation of Brissaud's that percussion of the patellar tendon excited local epileptic attacks

In a few cases no movements occur, at least as primary phenomena, but the patient complains that the stimuli employed have suddenly excited in the area tested a numbness, a tingling or other paræsthesiæ, apparently identical with those that occur in sensory epilepsy These may remain local or spread, and may or may not be followed by motor spasms. I have seen one patient at least whose hand after a prolonged examination of sensation suddenly "went dead" and became so anæsthetic that further testing of sensation was impossible It is probable that the sudden variations in sensibility occasionally met during the examination of sensation in patients with lesions of a parietal lobe are due to a palsy of cortical function brought about by stimulation.

I have also seen a few men with gunshot wounds in the neighbourhood of the motor cortex who asserted that long continued use of the hand of the side opposite to that on which the wound was tended to excite local spasms or seizures beginning in that hand. We have some experimental confirmation of this, for Sauerbruch found that if the paw of a monkey was flexed and extended passively for a long period local spasms were excited in it by the injection of a dose of cocaine so small that it had no effect if the animal had been at rest, or if its paw had not been submitted to passive movement

Some men subject to epileptiform attacks commencing with visual phenomena owing to gunshot wounds of the occipital region have told me that bright lights, cinema exhibitions, and other strong retinal stimuli tend to bring on attacks Auditory stimuli may also excite attacks which commence with auditory auræ A man who consulted me some time ago had been subject since an accident to his head to epileptic seizures which commence with a sound like the note of a high-pitched bell in his left ear; he is convinced that any loud noise may bring on an attack, and has consequently given up his profession and retired to a quiet country place where the seizures have been much less common And some months ago I saw in the National Hospital a woman, under the care of my colleague Dr Risien Russell, who was subject to left-sided motor and sensory attacks, some of which commenced with a noise or a musical tune. In her case, too, epileptiform attacks were brought on by loud noises Later a tumour was removed from her right temporal lobe

There is therefore a certain amount of evidence that the peripheral stimulation of a limb which is subject to motor or sensory epilepsy, or of a sense organ to which analogous phenomena are referred, may excite epileptic symptoms if the corresponding part of the cortex is in an unstable state. The explanation is probably that the inflow of a large mass of sensory impressions to the cortex raises its excitability and consequently makes it more liable to discharge if it is in an instable state owing to the existence of injury or disease Possibly this enhanced excitability of the cortex by peripheral stimuli in abnormal amount may explain the "reflex epilepsy" of which Brown-Sequard and his successors wrote so much, but it must be admitted that the justification of this term is seriously questioned to-day

Another interesting fact is that local spasms of cortical origin can be sometimes arrested by various devices applied to the part where they commence Many patients subject to Jacksonian epilepsy assert that they can prevent a certain number of their attacks from spreading by various means; since the days of Galen some have relied on a ligature around the limb which can be pulled tightly when the attack begins, others find that checking the spasms passively by seizing the part convulsed is more effective, others attempt to arrest the convulsions by strong volitional innervation of the antagonistic muscles, while some resort to vigorous sensory stimulation, as slapping the part with a hand or plunging it into cold water How these measures act it is difficult to say; it may be that they excite an inhibition of those portions of the cortex at and around the point where the discharge is commencing There is, however, no doubt that portions of the cerebral cortex from which epileptic phenomena can be elicited may be so influenced by stimulation of corresponding parts of the periphery of the body that discharges result, or on the other hand that discharges commencing are checked

These phenomena of local epilepsy which result from excitation, exhaustion, and inhibition of an area of cortex in a state of functional instability belong to a relatively simple physiological level But they are all closely related to features of ordinary epilepsy, in which factors of the same order acting at a higher physiological plane where discharges of positive and negative nature may spread more quickly and more widely help to explain the origin and many of the characters of the seizures

PSYCHOGENIC ASTHMA

A RECORD OF TWO CASES

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There has never been unanimity of opinion regarding the pathogenesis of asthma Until recent years the condition was commonly regarded as a "reflex neurosis," and radical therapy consisted in the search for, and removal of, obstructions to respiration and other foci of irritation To-day it is usual to regard asthma as an expression of protein hypersensitivity, and it is grouped in text-books with hay-fever, urticaria, and other anaphylactic phenomena The protein-idiosyncrasy theory of asthma is held so strongly by one authority that he is unwilling to accord ætiological significance to any other factor

The two cases, sent to me by Sir Charlton Briscoe, which are briefly described, here suggest that such an exclusive view might be modified The cases are quoted as exceptional, and their citation should not imply that the writer regards asthma as a pure psychoneurosis Asthmatic attacks are clearly brought about through the agency of the vegetative nervous system In many cases the disturbance is initiated by a biochemical stimulus, in others, it is suggested, the disturbance is to be sought for at the psychological level Similarly, recent work has shown that attacks which are clinically indistinguishable from so-called *true* epileptic fits can be the expression of mental conflict Furthermore, it is a commonplace of clinical observation that even in those cases of asthma in which protein idiosyncrasy can be clearly demonstrated mental stress can precipitate the attacks With regard to the two cases here described, it is of interest to note that two different forms of technique were employed in their psychological investigation, neither of which involved psycho-analysis in the Freudian sense, and that in neither case was the psychogenesis traced to the sex-instinct

Case 1 —A boy, aged 12 years, who had suffered from asthma preceded by feelings of restlessness for nine years During the period October, 1921, to January, 1922, which was spent in hospital, he had had no attacks and had put on weight, but he had at once relapsed on returning home Physical examination revealed nothing abnormal. It was difficult to win the boy's confidence, and psychotherapy met at the beginning with considerable suspicion and resentment Hypno-analysis was the psychotherapeutic method chosen in this case Although resistant at first, he proved to be an excellent hypnotic subject, and was eventually able under hypnosis to recall, and in fact to re-experience, his past birthdays as far back as his second birthday His manner and vocabulary were always appropriate to the period of life under recollection

The investigation showed that the asthmatic attacks centred round the emotion of fear and the idea of suffocation Under deep hypnosis the following repressed traumatic memories were vividly recalled, and by suggestion subsequently restored to consciousness He remembered that at the age of two his nurse used to silence his cries by stuffing pieces of rag into his mouth She told him that if he were a naughty boy a man would come and take him away in a sack She used to beat him with a broom and sometimes locked him in a dark coal-cellar, which was stuffy and full of cobwebs Another incident recalled under hypnosis, which occurred at the age of two, but which seemed to have little direct bearing on his asthma, was falling off a fence and being picked up by his mother who thought he was dead This story was corroborated by his mother The relation of these experiences was accompanied by much pantomime and a considerable display of emotion Upon their restoration to consciousness asthmatic attacks ceased to recur I saw him on six occasions, with intervals of one week between periods of treatment, which lasted for about an hour

Case 2 —A woman, aged 31 years, a school-teacher, had suffered from recurrent bronchitis since the age of 9 Asthma was diagnosed by her doctor at the age of 17 Her severe attacks usually occurred in the summer months, but she was subject to bouts of dyspnœa whenever she was at home For one period of two years' duration she enjoyed a complete remission from asthma, this period corresponded with her regular attendance at the confessional (she was an Anglo-Catholic, and had found a sympathetic confessor for the time being)

Her attacks occurred at night and were invariably preceded by the following dream "I find myself by the side of a brook, quite close to my home The brook overflows and engulfs me When the water reaches my neck, I awaken into an asthmatic attack" She had dyspnœa for about three hours following the attack, but usually managed to get to sleep again at about 5 A M Her attacks, which were typical attacks of spasmodic asthma, were sometimes followed by bronchitis, in any case she usually had to stay away from school for about three weeks suffering from cough with copious yellow expectoration She remembered having at the age of three fallen into a stream from which she was speedily rescued, and she was subsequently put to bed for the rest of the day She occasionally had claustrophobiac dreams, and at times suffered from slight claustrophobia in waking life Temperamentally she is a cyclothyme, "always either up in the clouds or down in the dumps"

Physical examination showed a left-sided deflection of her nasal septum and large tonsils Her respiratory movements were of the thoracic type, with deficient use of the diaphragm in inspiration Otherwise there were no physical signs In the course of the "therapeutic conversation" the latent meaning of her recurrent dream became clear The interpretation, which she accepted with conviction, provided a satisfactory explanation not only of her dream but also of the asthmatic attacks It is important to stress the fact that the revealed conflict for which the asthmatic attacks sought to provide a solution in symbolic form was a current one and unconnected with the patient's sexual life The writer saw her on only one occasion for about one hour in February, 1925 Since her "analysis" she has had no return of asthma according to her letter of Feb 27th, 1927

These two cases show that it is always worth while to consider the psychological side of asthma In Case 1 there was no obvious cause for the condition In Case 2 there were three factors (*a*) bronchitis, (*b*) enlarged tonsils, (*c*) a deflected nasal septum, which might have been regarded as causal, and to the elimination of which treatment might have been exclusively—and fruitlessly—directed

TUBERCULOSIS OF THE LARYNX AND ARTIFICIAL PNEUMOTHORAX.

NINE CASES: COMPLETE HEALING IN SIX

(From King Edward VII Sanatorium, Midhurst)

BY SIR STCLAIR THOMSON, M D,
HONORARY LARYNGOLOGIST,
AND
RICHARD R TRAIL, M D,
RESIDENT MEDICAL SUPERINTENDENT

Laryngeal Tuberculosis and General Prognosis

IT has long been recognised that secondary infection of the larynx is more frequent in advanced cases of pulmonary tuberculosis When it occurs in earlier cases, or in those with limited chest lesions, experience teaches that this complication generally indicates either a severe type of infection, or a lessened degree of resistance, or both There is rarely an exception to this principle, particularly if tubercle bacilli are present and persistent in the sputum In "closed" cases—i e, from free T B—on the other hand, the laryngeal lesion is always less alarming and the prospect is less dark

The influence of a laryngeal lesion in rendering the general prognosis more gloomy has been demonstrated by previous investigations made in this sanatorium [1] Briefly stated, these showed that 75 per cent of all laryngeal cases seen here were dead within five years, and that of three patients with a throat complication two were dead within a period when, after the same lapse of time in purely pulmonary cases, two out of three patients would still be alive

Local Treatment.

At the present time, after 16 years' experience, the chief local measures on which we have been led to rely are voice rest and the galvano-cautery The first is always beneficial But strict silence can only be counted on for complete cicatrisation in a limited number of cases Out of 477 laryngeal cases it was only thought worth insisting on in 67 cases Of these 23 were cured (=34 3 per cent) So, also, the cautery was only deemed suitable in 74 cases, though it effected a cure in no less than 46 of them (=62 1 per cent) Both methods, separately or combined, take many months, and though they may fulfil the Hippocratic principle of healing *tuto*, they can neither of them claim to be *cito et jucunde*

Artificial Pneumothorax.

We therefore welcome any further measure which promises to meet these two desirabilities Artificial pneumothorax (A P T), in the treatment of suitable cases of pulmonary tuberculosis, has become a well-established measure, with daily increasing experience as to its indications, limitations, and results

Some References to the Literature

The published references concerning laryngeal tuberculosis and pneumothorax are not numerous This may be because the regular examination of the larynx in all chest cases has not yet become an established routine, or because, as above-mentioned, a laryngeal lesion always means a more severe infection and hence the number of such cases (pulmonary and laryngeal) suitable for treatment by artificial pneumothorax cannot be large It will also be realised that such cases cannot be very numerous, as they are restricted to those with a unilateral lung lesion, or, at most, with only a trifling invasion of the other side Riviere says that laryngeal tuberculosis is no contra-indication unless far advanced, and even then a doubtful one [2] Burrell agrees that "tuberculous laryngitis is no contra-indication and is usually improved by the treatment" [3] Dumarest and Brette have noticed that the laryngeal condition is never aggravated by this treatment, that it is generally improved, and that, in any case, it renders the larynx more favourable for local treatment [4] The experience of Swezey and Schoubar is that only acute tuberculous lesions in the larynx contra-indicate pneumothorax treatment [5] Legourd has had experience of 56 patients with active laryngeal tubercle in 300 cases treated with pneumothorax He considers it a precious addition to our treatment; never regards it as a contra-indication; and, on the contrary, thinks that the laryngeal lesion should urge us to lose no time but rather to employ it promptly in suitable cases [6]

Clinical Records

The following cases have been long and carefully observed In all of them tubercle bacilli were present, the laryngeal lesions were definite and progressive, in five of them rapid healing followed the collapse of one lung; in the sixth case the addition of local treatment with the galvano-cautery secured cicatrisation

CASE 1 *Male, aged 23, both cords bright-red, abraded, and ulcerated Improvement within a month of A P T, and quite healed within two months*—Had been husky for two months when admitted on April 4th, 1926, with a shallow ulcer over each vocal process He had a very active lesion of the left lung, his temperature (rectal) on absolute rest ranged between 98° and 100 6°, he looked very ill, and the prognosis was regarded as grave, particularly because, in spite of rest in bed and strict silence, the laryngeal mischief increased rapidly, so that a month after admission the note was "Both cords are now bright-red, abraded on the surface and with early, superficial ulceration along the free margin of the posterior half on each side There is a deeper, triangular ulcer over each vocal process" (Fig 1) Within a month of the A P T (performed May 21st, 1926) the note made was "difficult to see any lesion" Within two months the cords were intact, but still pinkish, and the patient was allowed to talk A month later it was noted that "the cords are no longer pink, but quite white and flat There is a little *coup d'ongle* scar over the left cord posteriorly" (Fig 2)

Development of Laryngeal Tuberculosis after Admission to Sanatorium

By systematically examining the larynx of every patient admitted to Midhurst, even if he had no huskiness or any other symptom referable to that organ, it was found, during the 10 years from 1912 to 1922, that amidst 2070 who passed the first inspection as normal, six cases developed laryngeal lesions after admission Such a small proportion, once a patient is within the shelter of a sanatorium, is noteworthy Of these six cases four are dead, one is reported as very ill, and only one after ten years writes that he is alive and well

These observations (published in 1924), though few in number, prompt the hypothesis that, when laryngeal tuberculosis does develop after a patient has started sanatorium life, the prognosis is not good. It suggests a want of response to the favourable conditions, or a severe infection Hence, the following three cases are particularly interesting as showing the value of A P T, for in each of them the laryngeal mischief only started after the patient's admission to the sanatorium

CASE 2. *Male, aged 18, laryngeal tuberculosis developed in sanatorium Four months under observation and silence, without improvement Larynx healed within three months of A P T*—Admitted on Sept 30th, 1925, with early signs at both apices These remained stationary on the right side but extended on the left At the end of five months' treatment his temperature was never satisfactory His larynx was passed as "normal" on admission, but a month later, when his persistent temperature had confined him to bed, he became husky and it was found that there was inter-arytenoid crinkling and both cords were pink, abraded, and congested, particularly along their attached border (Fig 3) probably that the inflow of a large mass of sensory impressions to the cortex raises its excitability and consequently makes it more liable to discharge if it is in an instable state owing to the existence of injury or disease Possibly this enhanced excitability of the cortex by peripheral stimuli in abnormal amount may explain the "reflex epilepsy" of which Brown-Sequard and his successors wrote so much, but it must be admitted that the justification of this term is seriously questioned to-day

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[1] StClair Thomson Tuberculosis of the Larynx, Ten Years' Experience in a Sanatorium Medical Research Council 1924 Tuberculosis of the Larynx Its Significance to the Physician The Mitchell Lecture, Brit Med Jour Nov 8th, 1924

[2] Clive Riviere The Pneumothorax Treatment of Pulmonary Tuberculosis, Oxford Medical Publications, London, 1917

[3] L S T Burrell Report on Artificial Pneumothorax Medical Research Council London 1922 p 14

[4] F Dumarest and P Brette La Pratique des Pneumothorax Thérapeutique Paris Masson et Cie deux Édit, 1923, p 210

[5] American Rev Tuberc 1926 xiii, 156

[6] Rev Gén de Chir et de Thérap, 1921, xxxv, 691-696

Another interesting fact is that local spasms of cortical origin can be sometimes arrested by various devices applied to the part where they commence. Many patients subject to Jacksonian epilepsy assert that they can prevent a certain number of their attacks from spreading by various means; since the days of Galen some have relied on a ligature around the limb which can be pulled tightly when the attack begins, others find that checking the spasms passively by seizing the part convulsed is more effective, others attempt to arrest the convulsions by strong volitional innervation of the antagonistic muscles, while some resort to vigorous sensory stimulation, as slapping the part with a hand or plunging it into cold water How these measures act it is difficult to say, it may be that they excite an inhibition of those portions of the cortex at and around the point where the discharge is commencing There is, however, no doubt that portions of the cerebral cortex from which epileptic phenomena can be elicited may be so influenced by stimulation of corresponding parts of the periphery of the body that discharges result, or on the other hand that discharges commencing are checked

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Laryngeal Tuberculosis and General Prognosis.

IT has long been recognised that secondary infection of the larynx is more frequent in advanced cases of pulmonary tuberculosis When it occurs in earlier cases, or in those with limited chest lesions, experience teaches that this complication generally indicates either a severe type of infection, or a lessened degree of resistance, or both There is rarely an exception to this principle, particularly if tubercle bacilli are present and persistent in the sputum In "closed" cases—i e, from free T B—on the other hand, the laryngeal lesion is always less alarming and the prospect is less dark

The influence of a laryngeal lesion in rendering the general prognosis more gloomy has been demonstrated by previous investigations made in this sanatorium [1] Briefly stated, these showed that 75 per cent of all laryngeal cases seen here were dead within five years, and that of three patients with a throat complication two were dead within a period when, after the same lapse of time in purely pulmonary cases, two out of three patients would still be alive

Local Treatment

At the present time, after 16 years' experience, the chief local measures on which we have been led to rely are voice rest and the galvano-cautery The first is always beneficial But strict silence can only be counted on for complete cicatrisation in a limited number of cases Out of 477 laryngeal cases it was only thought worth insisting on in 67 cases Of these 23 were cured (=34 3 per cent) So, also, the cautery was only deemed suitable in 74 cases, though it effected a cure in no less than 46 of them (=62 1 per cent) Both methods, separately or combined, take many months, and though they may fulfil the Hippocratic principle of healing *tuto*, they can neither of them claim to be *cito et jucunde*

Artificial Pneumothorax

We therefore welcome any further measure which promises to meet these two desirabilities Artificial pneumothorax (A P T), in the treatment of suitable cases of pulmonary tuberculosis, has become a well-established measure, with daily increasing experience as to its indications, limitations, and results

Some References to the Literature

The published references concerning laryngeal tuberculosis and pneumothorax are not numerous This may be because the regular examination of the larynx in all chest cases has not yet become an established routine, or because, as above-mentioned, a laryngeal lesion always means a more severe infection and hence the number of such cases (pulmonary and laryngeal) suitable for treatment by artificial pneumothorax cannot be large It will also be realised that such cases cannot be very numerous, as they are restricted to those with a unilateral lung lesion, or, at most, with only a trifling invasion of the other side Riviere says that laryngeal tuberculosis is no contra-indication unless far advanced, and even then a doubtful one [2] Burrell agrees that "tuberculous laryngitis is no contra-indication and is usually improved by the treatment" [3] Dumarest and Brette have noticed that the laryngeal condition is never aggravated by this treatment, that it is generally improved, and that, in any case, it renders the larynx more favourable for local treatment [4] The experience of Swezey and Schoubar is that only acute tuberculous lesions in the larynx contra-indicate pneumothorax treatment [5] Legourd has had experience of 56 patients with active laryngeal tubercle in 300 cases treated with pneumothorax He considers it a precious addition to our treatment; never regards it as a contra-indication; and, on the contrary, thinks that the laryngeal lesion should urge us to lose no time but rather to employ it promptly in suitable cases [6]

Clinical Records

The following cases have been long and carefully observed In all of them tubercle bacilli were present, the laryngeal lesions were definite and progressive, in five of them rapid healing followed the collapse of one lung, in the sixth case the addition of local treatment with the galvano-cautery secured cicatrisation

CASE 1 *Male, aged 23, both cords bright-red, abraded, and ulcerated Improvement within a month of A P T, and quite healed within two months*—Had been husky for two months when admitted on April 4th, 1926, with a shallow ulcer over each vocal process He had a very active lesion of the left lung, his temperature (rectal) on absolute rest ranged between 98° and 100 6°, he looked very ill, and the prognosis was regarded as grave, particularly because, in spite of rest in bed and strict silence, the laryngeal mischief increased rapidly, so that a month after admission the note was "Both cords are now bright-red, abraded on the surface and with early, superficial ulceration along the free margin of the posterior half on each side There is a deeper, triangular ulcer over each vocal process" (Fig 1) Within a month of the A P T (performed May 21st, 1926) the note made was "difficult to see any lesion" Within two months the cords were intact, but still pinkish, and the patient was allowed to talk A month later it was noted that "the cords are no longer pink, but quite white and flat There is a little *coup d'ongle* scar over the left cord posteriorly" (Fig 2)

Development of Laryngeal Tuberculosis after Admission to Sanatorium

By systematically examining the larynx of every patient admitted to Midhurst, even if he had no huskiness or any other symptom referable to that organ, it was found, during the 10 years from 1912 to 1922, that amidst 2070 who passed the first inspection as normal, six cases developed laryngeal lesions after admission Such a small proportion, once a patient is within the shelter of a sanatorium, is noteworthy Of these six cases four are dead, one is reported as very ill, and only one after ten years writes that he is alive and well

These observations (published in 1924), though few in number, prompt the hypothesis that, when laryngeal tuberculosis does develop after a patient has started sanatorium life, the prognosis is not good It suggests a want of response to the favourable conditions, or a severe infection Hence, the following three cases are particularly interesting as showing the value of A P T, for in each of them the laryngeal mischief only started after the patient's admission to the sanatorium

CASE 2 *Male, aged 18, laryngeal tuberculosis developed in sanatorium Four months under observation and silence, without improvement Larynx healed within three months of A P T*—Admitted on Sept 30th, 1925, with early signs at both apices These remained stationary on the right side but extended on the left At the end of five months' treatment his temperature was never satisfactory His larynx was passed as "normal" on admission, but a month later, when his persistent temperature had confined him to bed, he became husky and it was found that there was inter-arytenoid crinkling and both cords were pink, abraded, and congested, particularly along their attached border (Fig 3)

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[1] StClair Thomson Tuberculosis of the Larynx, Ten Years' Experience in a Sanatorium Medical Research Council 1924 Tuberculosis of the Larynx its Significance to the Physician The Mitchell Lecture, Brit Med Jour Nov 8th, 1924

[2] Clive Riviere The Pneumothorax Treatment of Pulmonary Tuberculosis, Oxford Medical Publications, London, 1917

[3] L S T Burrell Report on Artificial Pneumothorax, Medical Research Council London, 1922, p 14

[4] F Dumarest and P Brette La Pratique des Pneumothorax Thérapeutique Paris Masson et Cie, deux l'édit, 1923, p 210

[5] American Rev Tuberc, 1926, xiii, 156

[6] Rev Gén de Chir et de Thérap, 1921, xxxv, 694–696

He was put on silence for seven months without improvement But a month after the A P T, while still in bed, the larynx was noted as "statu quo", a month later it was "catarrhal," and at the end of three months the note was made "quite healed, to talk"

CASE 3 *Female, aged 24, tuberculosis of larynx developed two months after admission Three months' observation, under silence, but disease extending Improvement within a month of A P T, and at the end of third month larynx healed* —Admitted on June 19th, 1924, with active signs throughout left lung, while X rays showed soft shadows under clavicle on right side Temperature within normal limits, was irregular, and she was never fit for exercise Two months after admission all the right cord and the anterior third of the left was superficially ulcerated (Fig 4) The sputum was still positive when A P T was performed on the left side on Oct 24th, 1924 A month later there was "clean ulceration of all right cord and ulceration of anterior third of left" Two months later the temperature had become normal, and the three months' silence was abandoned, for both cords were healed, although still pinkish, and the right one was irregular in all its extent Five months after the A P T the voice was restored to normal and the larynx showed no trace of disease

The next case (Case 4) is particularly interesting for the following reasons (1) it was the most extensive which, so far, has been successful, (2) it developed in the sanatorium; and (3) after six months there the patient was discharged as "worse" It was later on that A P T was carried out by Dr L Burrell, to whom we are indebted for permission to publish his record of the case

FIG 1

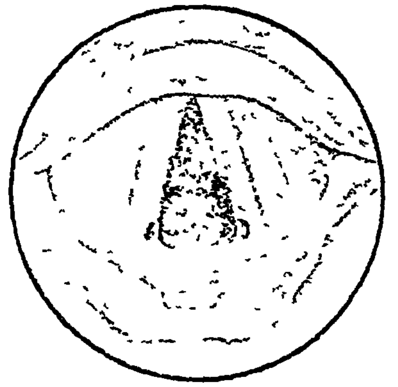

FIG 2.

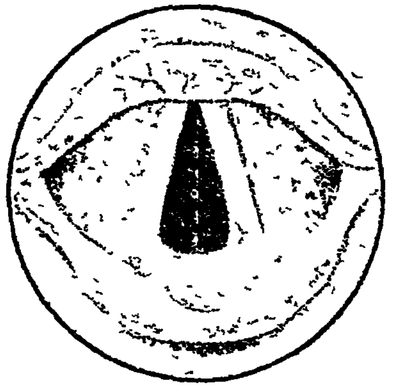

FIG. 3

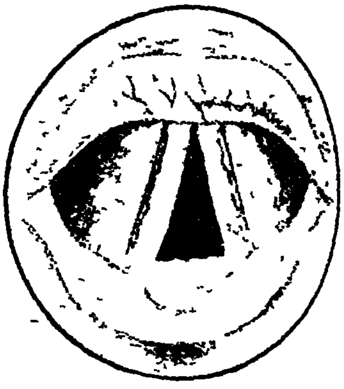

FIG 1 —The larynx in Case 1 showing abraded and ulcerated cords

FIG 2 —The larynx in Case 1, quite cicatrised three months after A P T Note the scar over left vocal process

FIG 3 —The larynx of Case 2, not improved with seven months of silence A.P T. was followed by complete healing of larynx within three months

CASE 4 *Male, aged 37, laryngeal tuberculosis developed one month after admission Extensive disease Discharged "worse" Complete healing* —Admitted on July 29th, 1922 with signs throughout the left lung and at the upper apex of the right The evening temperature (mouth) ran regularly to 99° A month afterwards he became husky and a grey-yellow, irregular ulceration was seen on the inner margin of the posterior third of each cord This extended until eight months later there was extensive ulcerating, stalactite deposit over all the interarytenoid space and ulceration of the posterior half of both cords (Fig 5) While in the sanatorium he gained 14 lb in weight, but his evening temperature (mouth) remained at 99°, the sputum was an ounce a day, and he was never fit for any exercise

He was not seen again for nearly three years—i e, not between May, 1923, and Feb 28th, 1926 It appears that after leaving the sanatorium in 1923 he passed under the care of Dr Burrell, who induced an artificial pneumothorax on April 12th, 1924 When the patient presented himself to us again on Feb 28th, 1926, he was still whispering (N B —He had never been put on strict silence as the condition was looked on as too hopeless to be worth it) We were astonished to find both cords completely healed, while a large but limited fibroid deposit, without any superficial ulceration, occupied the centre of the interarytenoid region (Fig 6) Five months later this fibrosis had diminished to an even, flat band of scar tissue across the lower part of the interarytenoid region, on a level with the cords (Fig 7) The patient had not quite succeeded in regaining the normal use of his sound cords, he had whispered so many years with his ventricular bands (*Taschenbandsprache*, as they call it in Germany) that he found it difficult to discontinue the habit! At the present moment his general medical condition is reported to be excellent, good fibrosis, no symptoms except a little cough and occasional sputum which no longer contains T.B

Artificial Pneumothorax is not Sufficient in all Cases to Effect a Cure

It will be noted that in three of these cases the healing of the laryngeal lesion was rapid—a matter of one to three months In one case (Case 4) it is difficult to say how soon the extensive disease began to heal But we must be prepared for cases in which the induction of an A P T, though helpful, is not sufficient without other (local) measures In the following case the disease in the larynx persisted for one and three quarter years after the lung had been collapsed, and in spite of prolonged silence, and then rapidly yielded to the galvano-cautery

CASE 5 *Male, aged 18, laryngeal disease present on admission, but extending after A P T No improvement at end of 21 months, in spite of silence Healed in six months with three cautery treatments* —Admitted April 6th, 1923, with T B + and an ulcer over right vocal process A P T on 24th, but, in spite of this, during the next six months the laryngeal mischief increased until there were grey, ulcerating, indolent deposits over each vocal process and the posterior half of both cords. This condition persisted throughout 1924 in spite of silence and every care on the part of the patient Consequently, galvano-cautery treatment was started in 1925, and he had three applications in January, April, and June By August the larynx was quite healed and he was allowed to talk, after more than two years of voice rest It has remained healed He has no cough and no sputum He still has refills, but his general condition is excellent, and he gains his livelihood as a book-keeper

Development of Tuberculosis of the Larynx after Admission to Sanatorium, and after Induction of Artificial Pneumothorax.

In their excellent book[7] Dumarest and Murard remark on the extreme rarity of the development of tubercle in the larynx, once the pneumothorax has been instituted A well-known American laryngologist states "I have never observed laryngeal tuberculosis develop in the course of treatment, nor did I ever see this complication occur subsequently in a patient cured or arrested by means of an artificial pneumothorax[8]

We, however, have had two cases in which this secondary infection did occur, though it was of slight extent and, in one instance, soon cleared up on the added prescription of voice rest

CASE 6 *Female, aged 20, laryngeal tuberculosis developed one month after A P T, but rapidly subsided under silence*

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[7] Op cit

[8] Julius P Dworetzky Annals of Otol, Rhinol, and Laryng, 1926, No 1, xxv, 42.

Complete recovery—Admitted March 19th, 1923, with a normal larynx T B + A.P T on May 2nd In June huskiness called for an examination of the larynx, when the cords were found to be congested, succulent, and rounded, with a trifling interarytenoid deposit. Under strict silence this subsided in a month The larynx has remained normal since—i e, for more than three years The patient has lost all cough and sputum, general health is good, but refills are still considered advisable

FIG 4

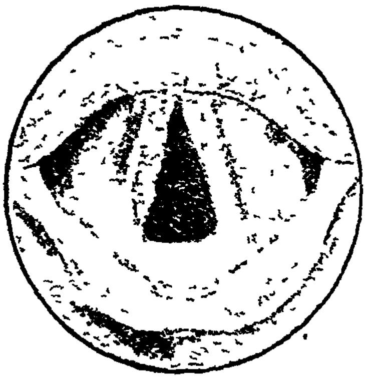

FIG 4—The larynx of Case 3 Disease extending in spite of silence Complete healing took place within three months of A P T

FIG 5

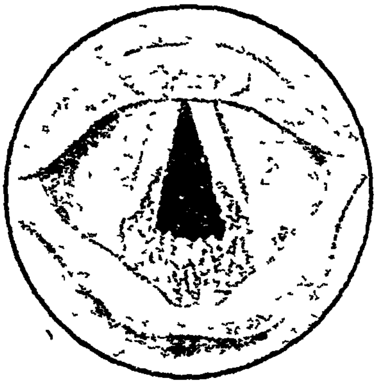

FIG 5—Extensive disease in larynx of Case 4

FIG 6

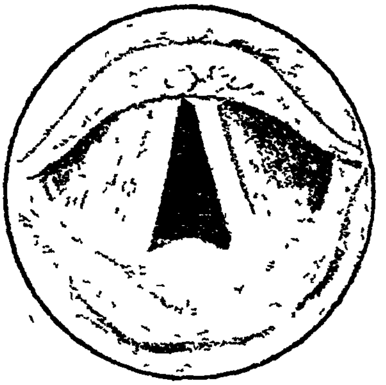

FIG 6—Larynx of Case 4 subsequent to A P T

CASE 7—We have another case still under treatment which may require the cautery. It is that of a female, aged 32, admitted on March 9th, 1926, with T B + and the larynx normal A.P T was performed on May 18th In October she became conscious of her throat and each vocal process was found to be "catarrhal and infiltrated, with small yellow spots, worse on the left" These broke down into ulcers By December (and with the addition of silence) the larynx on the right side had quite healed, but on the left side it remains in statu quo If this does not soon cicatrise spontaneously some treatment with the cautery will almost certainly ensure a cure

FIG. 7.

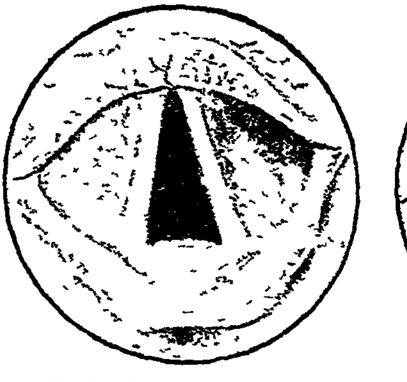

FIG 8.

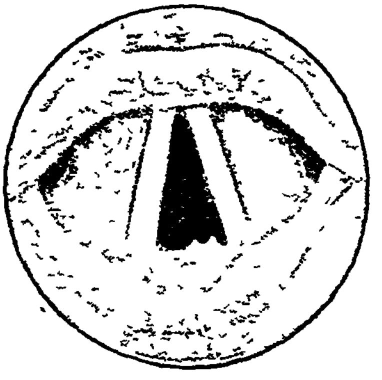

FIG 7—Larynx of Case 4, five months later to condition shown in Fig 6

FIG 8—Larynx in Case 9 This healed within two months of A.P T But collapse of lung was not complete, T B 's persisted in sputum, and larynx relapsed four months later

It will be noted that this is the second case in which tuberculosis in the larynx not only developed after admission to the sanatorium, but after the induction of artificial pneumothorax

Failure

In still a third case tuberculosis developed after admission to the sanatorium and after the performance of an A.P T, but the patient succumbed

CASE 8 *Male, aged 24, development of tuberculosis in larynx three months after admission and two months after A P T Death two years later*—Admitted Oct 7th, 1921 T B + Larynx normal A P T on Nov 30th, 1921 Two months later developed ulcerating, stalactite deposits in interarytenoid region, and an ulcerating deposit on the petiolus of the epiglottis There were never any signs of improvement He was discharged on April 20th, 1922, and died on Dec 9th, 1924

Relapse

Tuberculosis in the larynx and in the lung may recover coincidentally, or progress pari passu It has been shown that so long as the disease in the larynx is advancing, the lesion in the lung cannot become arrested* But the reverse is quite possible—i e, tuberculosis of the larynx may become healed while in the lung it continues unarrested or is even progressing We have records of many cases where tuberculosis in the larynx was healed and remained healed until the patient died, many years later from his pulmonary disease But these cases of cure in the larynx may relapse if the tuberculosis in the lung is still active Even a pneumothorax will not insure against this, as the following case will show

CASE 9 *Female, aged 24, slight laryngeal disease, but not yielding to six months' silence Healing in seven weeks after A P T Collapse of lung never complete T B 's persisted Relapse of larynx four months later*—Admitted Sept. 19th, 1925, with infiltration of upper half of right lung A month later she developed a right basal pleurisy She had been hoarse six months and had kept silence for four months before entering Midhurst with a diffused, abraded, interarytenoid deposit (Fig 8) After two more months of silence the condition remained stationary Within seven weeks of the A P T the larynx was healed and she was allowed to talk This larynx remained soundly cicatrised during the nine subsequent months we thought it wise to detain her in the sanatorium

Her stay in the sanatorium was prolonged through these months because she never had a complete collapse of the lung, it was held up at the base by the pleurisy described above Besides, she had been admitted with a negative report as regards her sputum, but we found T B present after a stay of two months, and they persisted in spite of treatment and progress However, as her general condition had improved, and the larynx was healed, she was allowed to return home after a sojourn of 11 months Four months later she again became husky, there was much laryngeal catarrh, and this time there was not only a small interarytenoid deposit but both vocal cords were pink and rounded with ulcerating deposit over each vocal process T B 's are still present, the general condition remains as satisfactory as on discharge; the left lung continues free, but the right is rather over-collapsed, possibly owing to recent refills being carried out at too frequent intervals She is shortly returning for further treatment at Midhurst

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* StClair Thomson Op cit.

Conclusions

Cases of pulmonary tuberculosis are always rendered much more serious by the addition of a laryngeal extension

This laryngeal complication is of still worse augury if it develops after admission to a sanatorium or after induction of an artificial pneumothorax

In spite of this experience, the presence of tuberculosis in the larynx is no contra-indication to this operation On the contrary it may speedily effect a cure or render more promising the addition of galvano-cautery or other treatment

The larynx can be cured by this measure, even although bacilli may continue to be present in the sputum and mischief to be detectable in the chest

The indications for the induction of artificial pneumothorax must, primarily, be based on the pulmonary and general condition of the patient So far as the larynx is concerned the only contra-indication would be an acute, miliary invasion

THE RESULTS OF OPERATIONS FOR GASTRO-DUODENAL ULCERATION

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The reader who pursues this communication to the end may reasonably ask why such a small series has been recorded and what indeed is the worth of any deductions based upon the observation of small numbers of patients Conversant with the literature of the subject, he will have in mind the large series published in America from the Mayo Clinic, in England by such masters of surgery as Moynihan, Sherren, Paterson, and Walton, in Central Europe, where the disease has been exceptionally rife since the closing years of the Great War, by von Haberer, Finsterer, Clairmont, and others But he will also have a vivid memory of the discordant conclusions arrived at by the several observers and he will find it very difficult, by the study of these published clinical records, to formulate any line of action in the treatment of gastro duodenal ulceration which he can follow with any confidence in the rectitude of his decision It becomes, in fact, a matter which must, to a large extent, be adjudged individually by each surgeon who essays to treat such patients The experiences of operators who are in a position to practise different methods and compare them are more valuable than massed statistics in which a number of surgeons are concerned, because certain sources of error in compiling them are eliminated Though restricted numbers of patients are dealt with it is maintained that a truer estimate of the relative worth of different procedures is obtained Of 130 patients suffering from chronic gastric or duodenal ulcer (61 gastric, 69 duodenal) which have been dealt with in the Surgical Unit at St Mary's Hospital by myself, 56 only (24 gastric and 32 duodenal sufferers) have been operated upon long enough and been available for subsequent inquiry of results to afford any useful information It is of these that I wish to write

Selection of Patients Suitable for Operative Intervention

The closer acquaintance with this disease becomes the greater grows the conviction that surgery should not follow diagnosis as a routine Experience completely fails to uphold the view of some surgeons that ulcers once formed can never be induced to heal without its aid[1] I have excised segments of both stomach and duodenum with lesions indistinguishable by simple inspection from ordinary ulcers in which histological examination has shown cicatrisation to have taken place and a layer of epithelium to have spread over the surface During the periods of relief between active symptoms so characteristic of ulcer reparative activity certainly occurs, and sometimes leads to epithelialisation of the ulcer The discovery of scars in the stomach or duodenum in the post-mortem room also points in the same direction, and is not so rare an occurrence C Hart[2] found as many scars in the duodenum as actual ulcers in his series of autopsies In successive gastroscopies R Schindler[3] actually watched a gastric ulcer heal Nevertheless it is a very striking fact of pathology that, in addition to the large callous gastric or duodenal ulcers, there exist others of quite small size (sometimes in the duodenum they are mere clefts), which persist unhealed indefinitely without the aid of surgery Surgery is nearly always necessary when a Haudek diverticulum of any size can be demonstrated by X ray examination; it is certainly required when a serious haemorrhage has occurred or where the pylorus has been narrowed, but in all other cases the patient should be allowed the trial of medical measures and only when his lesion has proved intractable to these means should he be subjected to the risk of operative treatment

The Plan followed in Operating upon Ulcers

The policy adopted in dealing with these ulcers has been as follows For gastric ulcer some form of resection is considered first, and only abandoned for gastro-enterostomy when the procedure appears to be fraught with much risk or technically impossible When the ulcer is very large and its adhesions are so widespread that access to normal stomach proximal to the lesion cannot be obtained, then gastro-jejunostomy has been preferred A previous perforation or perigastric abscess may bring such conditions about Only in one case was gastro-jejunostomy done because the ulcer at the pylorus appeared to have healed leaving nothing but a scar Amongst the 61 operations for gastric ulcer, on four occasions the abdomen was closed leaving conditions within unchanged, even gastro-jejunostomy was impossible

In the case of duodenal ulcer the policy followed has been very similar, except that there have been two indications up to the present for preferring gastro jejunostomy to resection—namely, (1) doubt as to the possibility of separating the callous mass without damage to the pancreatic or bile-ducts; (2) the small soft ulcer of the anterior wall of the duodenum, where duodenectomy in its present probationary stage was considered to entail an unjustifiable risk

Amongst 61 cases of gastric ulcer a resection of the stomach was carried out in 47 (77 5 per cent), of which more than one-half (67 per cent) were cases of ulcer adherent to or penetrating the pancreas. In five of these latter the ulcer was also adherent to the liver, in one case to the spleen, and in several instances to the mesocolon A Billroth I resection with axial union was performed whenever the ulcer was not at too great a distance from the pylorus (18 times), a sleeve resection when it was situated far toward the left extremity of the lesser curvature (25 times) A Polya operation was done four times and a V-resection with gastro-jejunostomy once Gastro-jejunostomy was only done in eight cases

Amongst 69 cases of duodenal ulcer partial duodenectomy was carried out in 49 (71 per cent) Of these 33 had an ulcer on the concave pancreatic wall of the duodenum (67 3 per cent) Simple excision combined with a Finney procedure were each done once Gastro-jejunostomy was done in 18 cases (26 per cent)

When removal of the diseased part of the stomach has been done the after care is very simple There is no need for prolonged special diet The remaining stomach is smaller but healthy The patient should avoid indigestible food until it is certain that the anastomotic sites are completely healed (six weeks), after which he is able to take ordinary diet, with this reservation that too much should not be eaten at a time The stomach being smaller a feeling of distension after meals is liable to be experienced for the first few months after operation This sensation gradually disappears and after a year has gone.

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[1] A J Walton Proc Roy Soc Med, Sec Surg 1926, xix, 48

[2] Mitt a d Grenz d Med u Chir 1918, xxxi, 291

[3] Münch med Woch 1923, xll, 121

Results Obtained in Gastric Ulcers.

There were two deaths amongst the 47 resections of the stomach. One of these was an operative death where the hepatic artery was accidentally ligated in a man with a callous ulcer in which cancer was developing The other man died after a Billroth I. operation on the sixth day with gangrene of the lung. I do not know whether he swallowed vomit recovering from the anæsthetic or later His stomach was somewhat dilated post mortem, a complication I have met with on two occasions after this type of gastrectomy, but one which is immediately relieved by the passage of a thin stomach-tube and aspirating the contents He had vomited after a comfortable period of three days There was a freely patent pylorus and good healing at autopsy. The mortality of gastrectomy for ulcer has therefore been 4 25 per cent

Of 20 gastric resections operated upon long enough for the after-history to be of value (18 months) 16 (80 per cent) are absolutely well The four patients still with some complaint are :—

CASE 25 —A nun of 49 operated upon May 7th, 1925 Ulcer of lesser curvature with hour-glass contraction removed by sleeve resection Now complains of a little flatulence She has no pain and eats ordinary food.

CASE 33 —A man of 37 had an ulcer of the posterior surface of the stomach near the cardiac end and adherent to the tail of the pancreas removed by sleeve resection on Sept. 23rd, 1925 For the first year after operation he complained of pain after food occasionally, but since then has been free. He has gained a stone in weight since his operation

CASE 38 —A woman of 52 had a Billroth I operation performed on June 25th, 1925. She had an early carcinoma close to the pylorus and a simple ulcer in the posterior wall of the stomach. She says she has occasional pains in the right side of her abdomen, but has no discomfort which she attributes to food.

CASE 16 —A woman of 38 had a Billroth I resection for an ulcer rather far along the lesser curvature away from the pylorus on Jan. 17th 1924 She complains of a little pain occasionally in the left side of her back. She eats ordinary food, and her weight has increased by half of what it was when she was operated upon (6 st 12 lb)

These failures are not absolute In each case the patients have received very great benefit from the operation Partial gastrectomy has therefore proved to be a most successful procedure, and sleeve resection seems as good a method as the Billroth I. or Polya operation

Gastro-jejunostomy is by general consent regarded as only of limited value as a curative operation for gastric ulcer, and rightly so, but it would be unfair not to refer to Case 30, a man of 50, who had such a large ulcer penetrating the pancreas and so many adhesions around that only an anterior gastro-jejunostomy could be carried out Fourteen months later he has no indigestion and declares himself to be in perfect health

Results Obtained in Duodenal Ulcers

Partial duodenectomy has been said to be too dangerous an operation to be considered a routine method of treatment. It is indeed a difficult and tedious procedure, but becomes more easy with increasing experience In 33 of 49 patients upon whom partial duodenectomy was performed ulcers were present on the pancreatic wall, so those cases were not selected on account of ease of performance of the operation Two patients died, one from bronchopneumonia, the other from cardiac failure 10 days after operation, a mortality of 4 per cent. This is almost exactly that of partial gastrectomy in my hands

Of 21 partial duodenectomies subsequently investigated 18 are absolutely well (85 7 per cent.) Of the three failures one complains of being full of wind after meals, but not of suffering any pain. He is very nearly quite well. The other two failures are :—

CASE 11 —A man of 37 had a resection with axial union of stomach and duodenum on April 14th, 1924 There was an ulcer on the anterior wall of the first part of the duodenum and a second on the posterior wall which had penetrated into the pancreas He now complains of some late pain after food when working, but not when he rests He eats only boiled food and says he occasionally vomits a sticky fluid

CASE 30 —A man of 28 had a similar operation performed on Nov 3rd, 1924, for an ulcer on the anterior wall of the duodenum which spread round to the back forming a stricture. This man writes very gratefully for relief of pain, but still apparently gets some of a mild character which radiates to the right shoulder He takes no special diet. He says that he is better since giving up alcohol and excessive smoking to which he was addicted

The patient whose common pancreatic and biliary ducts I accidentally injured and reported on in 1924 is now free from any abdominal trouble of any kind

During the same period that these 21 duodenectomies were done nine cases had a gastro-jejunostomy performed Five of these patients are absolutely well (55 5 per cent), and four complain. These four patients all appear to have considerable pain, have to be very careful what they eat, and one of them vomits. One of these operations was done on a man whose ulcer had perforated a year previously The other three men had ulcers with very little fibrosis around them. It would not be right to accept this percentage of cure from gastro-jejunostomy as a true picture of results, as the numbers are so small. Nevertheless, the difference between it and that following duodenectomy is very great, and justifies us in regarding gastro-jejunostomy as an inferior method of cure

Conclusions

1. When the results of the operative treatment of medically intractable gastric and duodenal ulcers by a single operator using different methods are compared it is found that a large proportion of patients are cured and the remainder improved

2. Partial gastrectomy will cure 80 per cent of such gastric ulcers It can be carried out in 77 per cent of all cases and has a mortality of 4 25 per cent

3 Gastro-jejunostomy is accepted as a much inferior method but sometimes gives remarkable relief in the most unfavourable conditions

4. Partial duodenectomy will cure 85 per cent. of duodenal ulcers which have not responded to medical measures It can be done in 71 per cent. of cases and has a mortality of 4 per cent

5 Gastro-jejunostomy is a much inferior operation to partial duodenectomy. In the small group of patients in whom it was used only 55 per cent were cured. This result agrees generally with those previously published by myself,[4] by R Lewisohn,[5] D Forsyth[6] A. Widler,[7] von Haberer and others, but contrasts strongly with those results published by Sir Berkeley Moynihan[8] J Sherren,[9] A. J. Walton,[10] and D. Balfour[11]

It is suggested that either a different class of case is dealt with by the two groups or a less exacting standard of cure is demanded by the one and that the only method of arriving at the truth of this matter is for each individual surgeon to compare the relative values of partial duodenectomy and gastro-jejunostomy in his own practice

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A STUDY OF THE PATELLAR REFLEX IN EPIDEMIC ENCEPHALITIS,

WITH SPECIAL REFERENCE TO THE EFFECT OF HYOSCINE UPON IT

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DESPITE the great importance of the patellar reflex, very few attempts have been made to examine in detail the variations to which it is subject in health and disease In the present paper an account is given of an attempt to study closely the knee-jerk in cases of epidemic encephalitis The effect of hyoscine and stramonium on this reflex is also dealt with

Description of Apparatus

The apparatus employed consists essentially of two parts, one concerned with the application of the stimulus to the patellar tendon, the other with the graphic representation of the knee-jerk thus obtained.

The first part is composed of a hollow metal cylinder with a bore of about ¾ in., through which runs a metal piston At one end of the latter is a handle and at the other end a small rubber disc, ¾ in in thickness By means of the handle the metal piston can be pulled back for a certain fixed distance against the resistance of a spring which is contained within the metal cylinder Once the piston has been forced back in this way it can be fixed by means of a small catch If this catch is slipped the spring will recoil carrying with it the metal piston and causing the rubber disc to strike against the patellar tendon A stand is employed in order to fix the cylinder with the contained piston at the required level

The recording portion of the apparatus consists of a lever with its fulcrum placed close to one end The short arm of the lever carries a pointer which writes on a revolving drum driven by clock-work The long arm of the lever is attached to the posterior aspect of the patient's ankle Thus it will be seen that any movement of the patient's foot will be accompanied by a corresponding excursion in the opposite direction of the pointer writing on the drum The latter is arranged in such a way that it slides to and fro on two parallel strips of metal thus keeping its long axis always in the same direction The apparatus described above was assembled according to Dr F. Golla's directions

Method of Obtaining a Graphic Representation of the Knee-jerk

The patient's right leg is stripped to a point a few inches above the knee He is placed in a chair which is raised on blocks and which has attached to it a simple contrivance for fixing the right leg above the knee The right leg is allowed to hang over the edge of the chair and of course cannot touch the ground as the chair is raised on blocks The patient's left foot is slipped behind the left leg of the chair so that it will not interfere with the movement of the long arm of the lever The latter is attached to the patient's ankle in the region of the tendo Achillis The direction of the long arm of the lever is compared with that of a special metal guide which is fixed below the fulcrum in such a way that it is at a constant angle to the long axis of the drum

By altering the position of the stand on which the drum, fulcrum, and direction guide are fixed, the long arm of the lever can be made to run parallel with the direction guide with the result that the pointer is always inclined in the same direction when it is recording the knee jerk on the drum The latter, on which has been placed a blackened paper, is moved forward until the pointer is resting lightly upon it. The pointer is raised and the drum is made to rotate until it has reached its maximum speed when the pointer is allowed to rest on the revolving blackened paper. A signal is given to the person operating the stimulus-producing apparatus and he frees the piston, which strikes the patellar tendon and causes the reflex. As the leg swings forwards and backwards a corresponding movement of the pointer in the opposite direction occurs and a graphic representation of the patellar reflex is thus obtained

It will be obvious that one can compare the general contour of the curves and the time taken in different cases, but it is not possible to compare the amount of the excursion since its graphic representation will be influenced by the length of the patient's leg from knee to ankle In order to find the length of time taken, each record is marked by a time signal which shows hundredths of a second.

Description of Normal Knee-jerk.

Below will be seen a graphic representation of the normal knee-jerk. (Fig 1.) The tracing shows three distinct curves, two below and one above the axis line. The axis line corresponds with the resting position of the leg just before the knee-jerk is elicited The first curve is below the axis line and corresponds with the forward swing of the leg immediately the patellar tendon has been struck. The second curve, which is above the axis line, is caused by the backward swing of the leg which occurs as soon as the extensor muscles of the knee relax The third curve is below the line and represents a secondary forward swing of the leg If the drum on which this record was taken had been larger, more secondary swings forwards and backwards would have probably been recorded, and these would have become less and less marked until finally the leg would have come to rest and the pointer would have again coincided with the axis line, as was the case before the patellar tendon was stimulated Every normal knee-jerk shows at least one secondary swing, and the majority show more than one

The time taken by each of these first three curves varies within the following limits —

1st curve or primary forward swing	45 to 60	hundredths of a second.
2nd curve or primary backward swing	26 to 44	
3rd curve or first secondary forward swing	26 to 50	

The total time taken by the first three curves varies from 110 to 145 hundredths of a second.

Interpretation of the Knee-jerk Tracing in the Normal Person

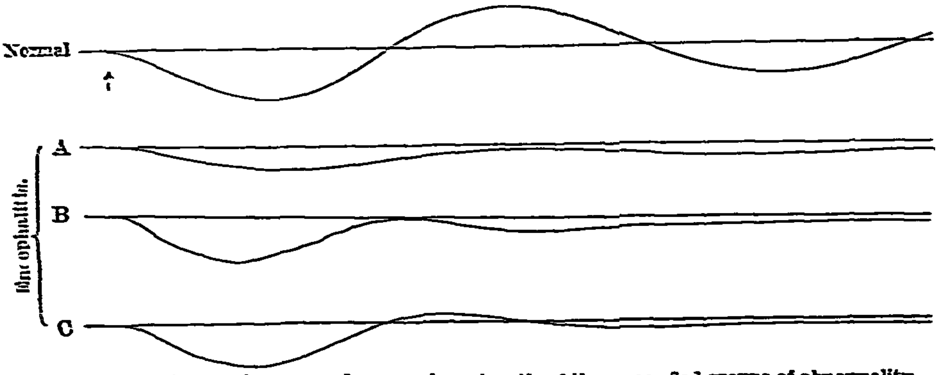
Some difficulty is experienced in the interpretation of the meaning of the normal knee-jerk tracing The primary forward swing of the leg, portrayed on the drum as a curve situated below the axis line, is of course due to the contraction of the extensor muscles of the knee, but the interpretation of the other curves, above and below the axis line, is less obvious The primary backward swing of the leg, shown on the tracing as a curve above the axis line, occurs immediately the extensors of the knee relax and appears to be capable of two interpretations

In the first place, the sudden contraction of the extensors of the knee following upon the application of the stimulus to the patellar tendon is accompanied by a lengthening of the opposing flexors This sudden stretching may be a secondary reflex contraction of the latter with the consequent backward swing of the leg Or, in the second place, the primary backward swing of the leg might be regarded as due to a pendulum-like movement, the leg below the knee behaving like an inert body and, after the contraction of the quadriceps has ceased, swinging backwards and forwards a number of times before finally coming to rest If both these explanations might apply to the primary backward swing they might also apply to all the secondary swings of the leg

As regards the first theory it has been demonstrated by Golla [1] by means of an electromyographic method that a contraction of the flexors of the knee does actually take place in the patellar reflex The antagonists enter into contraction about 10 sigma after the beginning of the response of the quadriceps By means of a mechanical method this contraction of the flexors was shown by Gordon Holmes,[2] though with his method the time relations could not be determined The electromyographic records published in a subsequent paper by Golla and Hettwer [3] show, however, that the flexor contraction does not outlast the reflex quadriceps contraction There seems to be no reason for attributing the backward swing of the leg to this flexor contraction, as Golla has pointed out that, when the patellar reflex is elicited as an isometric contraction there is no active rebound, although the flexor contraction coexists with the quadriceps contraction

The second theory, which holds that the leg below the knee, once the contraction of the quadriceps has ceased, behaves like an inert body and swings backwards and forwards after the manner of a pendulum, appears to be the correct one for the following reason. If, instead of causing the forward swing of the leg by striking the patellar tendon, the leg is passively moved forwards to the same extent as would occur when the patellar tendon is struck and is then suddenly released the leg will swing backwards and forwards for a short period of time in a pendulum-like manner. Obviously in this case there has been no sudden lengthening of the flexors of the knee and hence a reflex contraction due to sudden stretching of these muscles could not occur, and yet a primary backward swing and some secondary swings are obtained very similar to those which follow elicitation of the patellar reflex. This pendular movement of the leg below the knee is dependent on the presence of only a small amount of postural tone, as is the case in the normal person.

FIG. 1.



Normal knee-jerk curve and curves characteristic of three specified groups of abnormality.

Interpretation of the Knee-jerk Tracing in the Encephalitic

When dealing with the normal knee-jerk tracing it was suggested that the primary backward swing of the leg and all the secondary swings were due to the fact that the part of the leg below the knee after its primary swing forward as the result of stimulation of the patellar tendon, behaved like an inert body, and swung backwards and forwards after the manner of a pendulum before finally coming to rest. In cases of encephalitic Parkinsonism this movement is lost to a greater or less extent, due to the fact that in them there is a marked increase in the amount of postural tone present, as described by Foix[4] and Delmas-Marsalet.[5] In the normal person, if a limb be passively flexed, immediately the support is withdrawn the limb will return to its former resting position. In the case of encephalitic Parkinsonism the return to the former position is retarded on account of the increased postural tone in the muscles involved. Hence in the case of the knee-jerk in the encephalitic Parkinsonism the leg, once it has swung forwards, tends to remain in a fixed forward position or returns to the resting position (the axis line) at a much slower rate than the normal.

Description of the Knee-jerk in Encephalitis.

In all 18 patients suffering from mental symptoms associated with chronic epidemic encephalitis were examined, and 13 of them gave knee-jerk curves which differed from the normal. It was found that these abnormal curves could be divided into three distinct groups:—

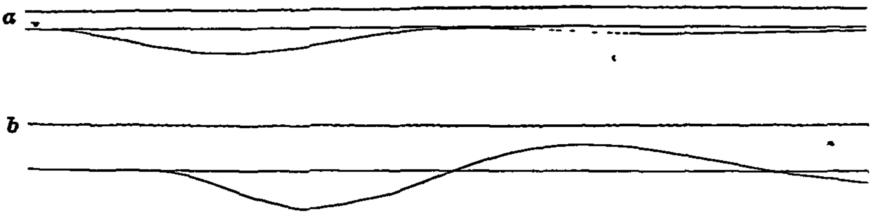
Group 1—The leg swung forwards executing the primary forward swing, but instead of immediately swinging backwards, remained in a fixed forward position, thus tracing on the drum a curve which lay wholly below the axis line (Fig. 1. (A)) Six cases fell within this group (see table, Nos. 1 to 5)

Group 2—The leg, after its primary forward swing, fell back until it reached its resting position, and then swung forwards again, thus tracing on the drum a curve which lay below the axis line, but touched it at one point. (Fig. 1 (B)) Two cases fell within this group (see table, Nos 6 and 7)

Group 3—The leg completed the primary forward and backward swings in the normal manner, then swung forwards again and remained in a fixed position. (Fig. 1 (C)) The five cases in this group gave tracings in which the first two curves appeared normal, but the pointer, once it had completed the second curve, remained below the axis line (see table, Nos. 8 to 12)

All the cases composing these three groups showed clinically muscular rigidity to a more or less marked extent The remaining five cases out of the total of 18 gave knee-jerk tracings which appeared normal. Only one of these five cases from the clinical standpoint showed definite muscular rigidity.

FIG. 2



Knee-jerk curves showing effect of hyoscine on encephalitis—(*a*) before, (*b*) after administration.

Effect of Hyoscine

(1) *On the normal knee-jerk*—The normal knee-jerk was little if at all influenced by the injection of hyoscine. The time taken by the curves was in some cases increased, in others diminished, but the general contour of the tracing conformed to the normal.

(2) *On the encephalitic knee-jerk*.—In 12 of the 13 cases of encephalitis which gave abnormal knee-jerk tracings the hypodermic injection of hyoscine hydrobromide caused, in from two to three hours, the general contour of the knee-jerk tracing to approach more closely to that of the normal. In some of the cases this beneficial effect on the tracing was more marked (Fig 2), (*a*) before hyoscine, (*b*) after hyoscine The table contains the details of these 12 cases before and after hyoscine

Any increase in this reading after hyoscine would mean that the knee-jerk had become more active or even definitely exaggerated Similarly, any decrease would signify a less active or even sluggish knee-jerk A glance at the table will show that the action of hyoscine in this respect varies greatly in different cases. It is interesting to note that those cases which presented abnormal knee-jerk tracings and in whom hyoscine caused an improvement in the general contour of the curves also benefited clinically from the exhibition of this drug The one case which showed an abnormal tracing which was not made to approach more closely to the normal from the clinical standpoint benefited only slightly when treated with the drug Of the five cases which gave normal types of knee-jerks three benefited clinically from the drug and two were uninfluenced

Case	Before hyoscine				After hyoscine			
	Pr F S in 1/100th sec	Pr B S in 1/100th sec	Sy F S in 1/100th sec	Height of Pr F S in cm	Pr F S in 1/100th sec	Pr B S in 1/100th sec	Sy F S in 1/100th sec	Height of Pr F S in cm
1	R	R	R	1 08	43	17	18	1 06
2	R	R	R	1 35	62	28	62	1 9
3	R	R	R	1 85	49	19	R	1 15
4	R	R	R	1 1	39	40	—	1 65
5	R	R	R	1 2	52	21	R	1 1
6	46	R	R	0 5	43	21	34	0 55
7	54	R	R	2 0	47	29	32	1 8
8	45	20	R	1 1	51	37	41	0 3
9	56	19	R	0 6	51	36	40	0 5
10	50	15	R	1 05	45	37	28	0 85
11	42	7	R	1 05	42	31	41	1 3
12	43	34	R	0 4	43	43	27	0 3

Pr F S = Primary forward swing
Pr B S = Primary backward swing
Sy F S = Secondary forward swing
R = Remained below axis line

Wherever the pointer failed to return to the axis line (position of rest of leg) and remained in a fixed position below the line the letter " R " is inserted Where, however, the pointer swung freely completing one or more curves the time taken by each curve is noted in hundredths of a second The amount of excursion of the leg during the primary forward swing is shown in the tracing by the distance the first curve reaches below the axis line This distance is shown in a separate column in centimetres

A few cases of katatonic dementia præcox were examined with a view to ascertaining whether, on account of the muscular rigidity present, the type of knee-jerk tracing would resemble that of the encephalitic, and if so, whether hyoscine would exercise any similar beneficial effect on the general contour of the curves It was found that cases of katatonic dementia præcox presented knee-jerk tracings which closely resembled those found in group I of the encephalitics, but that hyoscine failed to make the curves approach the normal, in striking contrast to the effect of this drug in cases of encephalitis

Certain French writers [6] have reported that the exhibition of stramonium by the mouth is attended with good results in cases of Parkinsonism They claim that among other things the rigidity is to a large extent removed although the tremor is unaffected In view of this report five of the cases of encephalitis under review were placed on tinct stramonii (♏ xxv t i d) and their knee-jerks investigated It was found that in one case the knee-jerk tracing was made to approximate more closely to the normal, the other four were unaffected Clinically three of the cases showed a very slight improvement, but the benefit obtained fell far short of that caused by hyoscine

Conclusions

1 The great majority of cases of epidemic encephalitis especially those which exhibit Parkinsonism give a definitely abnormal patellar reflex 2 Hyoscine, which has been shown to produce marked temporary improvement in these cases causes the abnormal knee-jerk to approximate to the normal 3 Cases of katatonic dementia præcox with well-marked rigidity show abnormal knee-jerks which closely resemble some of those found in encephalitic Parkinsonism, but hyoscine signally fails to exert a beneficial action on these abnormal knee-jerks

In conclusion I would like to thank Dr F L Golla, the Director of the Pathological Laboratory of the Maudsley Hospital, at whose suggestion these investigations were undertaken, for his unfailing interest and assistance To Dr N Roberts, the medical superintendent of West Park Mental Hospital, I am indebted for permission to publish the particulars of the cases investigated

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Clinical and Laboratory Notes.

A NOTE ON
CASTOR OIL IN ACUTE APPENDICITIS [1]

BY G M TANNER, M A CAMB , M R C S ENG ,
HOUSE SURGEON, ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

IT is generally agreed that to give castor oil in a case of acute appendicitis is bad practice , it is contrary to the established principle that an inflamed structure should be rested Nevertheless, patients with acute appendicitis are liable to be given castor oil either by their relations, before the doctor is called in, or by the doctor himself, who may give a dose of it as treatment for abdominal pain whose cause is as yet undiagnosed

The belief that castor oil does, in fact, cause acute appendicitis to take a more violent course than it otherwise would is supported by an analysis of a series of 50 consecutive cases of this disease admitted to beds in Addenbrooke's Hospital since I became house surgeon Cases of chronic and quiescent appendicitis which have been operated upon were excluded from the series , all the cases were sent in as acute " emergencies " and were operated upon forthwith as such

In six of these 50 cases the appendix was only mildly inflamed—that is to say, the inflammatory changes were limited to the mucous membrane In 21 the appendix was acutely inflamed, the whole organ being swollen and thickened, and lymph being present in some cases on the peritoneal surface The remaining 23 cases were all more advanced In ten of them the appendix was gangrenous but not perforated, and no pus was present , the other 13 were all appendix abscesses, and in six of these the appendix was found to have perforated

In every case, as matter of routine, the patient or the relations were definitely questioned about purgatives, and in eight of the 50 cases it was stated that castor oil had been administered In all of these eight cases the appendix was gangrenous, and in two it was perforated In six of them pus was also present, and one of the patients died It is significant that whilst only one-sixth of the 50 patients had had castor oil, this one-sixth included half those who developed an appendix abscess

Of the 50 cases the following three were fatal —

CASE 1 —A man, aged 37, came in on the fourth day of his illness with an appendix abscess Jaundice was first noticed on the day after his operation, and he died on the eighth day of portal pyæmia

CASE 2 —A man, aged 55, had dosed himself with pills at the onset of illness, and came up on the third day with a large appendix abscess He did very well for a few days after operation, but then he developed acute obstruction due to adhesions, and he died on the ninth day after a second operation

CASE 3 —A woman, aged 61, had been given castor oil by a friend at the onset of abdominal pain and came up on the fourth day Her appendix had completely disintegrated and she had extensive peritonitis and fæcal matter free in the abdomen The abdominal cavity was opened and drained, but she died of heart failure on the fourteenth day after operation

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[1] Read at a meeting of the Cambridge University Medical Society on March 4th

I think that two reasons may be given for the harmful effect of castor oil upon the course of acute appendicitis One is the obvious one—namely, that the oil further irritates the already inflamed and irritated gut and thus accelerates the pathological changes that are taking place The second reason is that it delays operation because it means that whoever gives the oil is going to temporise with the case the appendix being left to give rise to an abscess and possibly to perforate It may be noted that all three fatal cases were late cases; in one acute symptoms had been present for three days, and the other two for four days

The 50 cases—or rather the 47 survivors—may be analysed in a different way In 13 cases the patients were admitted to hospital on the first day of their illness and were discharged from hospital in an average time of 11 days from admission. In eight cases the patients came in on the second day, and their stay in hospital averaged 13 days The remainder, admitted on the third day and later, spent an average of 16 days in hospital

In conclusion, I may mention a case which is not included in the 50, because it is more recent.

A girl, aged 14, was seized with abdominal pain one day at noon One hour later her mother gave her a dose of castor oil, which made the pain much worse. A doctor was called in later in the day, diagnosed acute appendicitis, and sent her straight into hospital. She was operated upon eight hours after the commencement of her pain. Her appendix was long, red, and tensely distended and covered on the outside with lymph Its lumen was found to be full of that yellowish, intensely irritating fluid motion which is associated with castor oil, and the mucous membrane was full of small hæmorrhages.

I think it is clear that the pathological changes in this case were being accelerated by the castor oil

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A CASE OF

UTERUS DIDELPHYS WITH PREGNANCY

ALTERNATING IN THE TWO HORNS.

By J Lloyd Davies, M D M R C P Lond
F R C S Edin,
Hon Gynæcologist to the Swansea General Hospital,
and
C. J. Cellan-Jones M.B, B S Durh
F R C S Edin

Pregnancy has often been recorded in a congenitally defective uterus, even where there is independent development and complete failure in fusion of the Mullerian ducts Usually, however, atresia in some part of the cervix or vagina of one or other side only allows of the development of a fertilised ovum in a single horn; so that when evidence is found at operation of pregnancy occurring at intervals in both horns of a double uterus, the case is worthy of description.

A woman aged 27 was brought to the Swansea General Hospital by Dr D B Harrington on Dec. 27th, 1926 She had reached term in her second pregnancy, having been delivered four years previously, by Cæsarean section of a stillborn male child weighing 10½ lb Operation had been withheld in this instance until labour had been obstructed for a period of four days

On abdominal examination the fundus was found to be at the level of the xiphoid process and directed towards the right side. Fœtal heart sounds were plainly audible. A distinct mass was palpable above the pubes to the left of the middle line. The vulva was normal in appearance, but vaginal examination disclosed the presence of two distinct passages each containing a normal cervix and external os, separated from one another by a lax median septum. Both cervices were softened and the external os upon the right side admitted one finger

Labour was allowed to continue and eventually the membranes ruptured but the head did not descend. On Dec 28th, as the patient was extremely anxious for a living child, an abdominal Cæsarean section was decided upon. Laparotomy revealed a condition of complete uterus didelphys with a well-marked fold of peritoneum, or vesicorectal ligament as it is termed, occupying the deep fissure between the horns. The left horn, which was of a size corresponding to a three months pregnancy, exhibited, on its anterior surface, the scar of a previous Cæsarean section. From the right horn a living female child, weighing 6¼ lb was delivered. Permission to sterilise the patient could not be obtained although the danger of future pregnancies was explained.

Recovery was uneventful and when they were last seen, on April 7th, the mother and her child were both very well

An additional point of interest in this case is that the uterine abnormality produced an obstructed labour in both pregnancies whereas, according to most authorities, a double uterus does not usually interfere with spontaneous delivery

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Medical Societies.

ROYAL SOCIETY OF MEDICINE

SECTION OF MEDICINE.

At a meeting of this Section held on April 26th, the chair being occupied by Dr **Hugh Thursfield**, the President, Dr. **A Osman** and Dr. **H Carter** read contributions on the

Prevention of Scarlatinal Nephritis

Dr Osman said in an investigation into the treatment of nephritis by means of doses of alkalies it seemed possible that benefit might be derived from using alkalies prophylactically With that object in view, and through the kindness of Dr. T. H. Woodfield, the superintendent of the Park Fever Hospital, Hither Green, a certain number of wards were set aside for a number of months, and alkalies were given to the occupants of those beds as a routine, in small doses, in order to test the matter In some of other wards alkalies were not given to the patients, and these were used as controls In an experiment of this kind, on a somewhat large scale, it was difficult to follow out the minutiæ in all the investigations as one would like especially in regard to dosage. It was only possible to give a standard dose over an arranged period and watch the results After a time it was found that a small dose 0 90 g a day was not sufficient and so it had to be increased until a dose was reached at which albuminuria and nephritis appeared to be at any rate less common that in the cases in the control wards The figures which Dr. Carter would give were not to be considered final, but they were those obtained to date, they covered the 14 months during which the experiment had been in progress

Dr Carter projected on to the screen tables of figures relating to the cases observed The first table showed the cases which had been treated in the way described in the five wards set apart during the first three or four weeks of the scarlet fever. The disease in these patients was of varying severity and the range of age-incidence the usual one—4 to 10 years Of the 620 patients in this group, four developed nephritis: there were no cases of albuminuria Three of the four patients developed the nephritis between the twenty-second and the twenty-fifth days of the disease, at a time when the alkalies were given only over a period of three weeks so that when the nephritis developed the prophylactic treatment had already been discontinued In all four the urine was strongly acid One of the four cases was fatal This child had developed nephritis on the fourteenth day of the disease; death took place nine days later, and for seven days before the end suppression of urine had been complete Sections of the kidney of that case were examined by Dr. J E McCartney and also by Prof A. Stokes of Guy's Hospital, and both reports agreed that a previous nephritis lesion existed. Dr. McCartney's report was that it was subacute interstitial nephritis with antecedent glomerular change. The table showed a total incidence in these special wards of

0 6 per cent nephritis, albuminuria nil The second table embraced the remainder of the cases of scarlet fever in the hospital—i e , those which had not been treated with alkalies—and the 316 cases showed an incidence-rate of nephritis of 2 9 per cent The third table showed a comparison with the figures obtained from a fever hospital for acute cases, an institution which drew its cases from the same localities as that already named The period covered was the same Here, out of 336 cases, there were 7 of nephritis, 12 of albuminuria The total incidence was 5 5 per cent , and it corresponded, roughly, with the incidence in the London area in what could be regarded as a mild type of the disease After obtaining such encouraging results it seemed possible, Dr Carter said, by employing some modification of Sellard's test for alkaline tolerance and giving a set dose of alkalies, to arrive at an opinion as to which cases of scarlatina were likely to develop nephritis during that illness, and to aid treatment by estimating the calcium bicarbonate curve during the course of the scarlet fever

Discussion.

The PRESIDENT invited Dr. Osman to say why he was led to carry out this alkali treatment and why he considered this method was likely to diminish the incidence of nephritis

Dr OSMAN replied that he had noticed, in the treatment of nephritis of all types, that when the urine of patients was alkaline, the amount of albumin passed was less, and the volume of urine voided was more, than when the urine was acid That led him to a study of the alkalinity of the blood and related questions Whilst working on that, he encountered a case of anuria, caused apparently by a large dose of sanocrysin By giving that patient large doses of alkalies the anuria was overcome, in Dr Osman's opinion, because of the alkalies It seemed to him possible, therefore, that, in other cases, if metallic drugs were going to be used, the toxic effect of such drugs might be warded off by giving alkalies prophylactically , and in one or two instances that seemed to be the case Then it occurred to him that the experiment might be tried on a larger scale, and that the only condition under which one was likely to meet with a supply of cases of nephritis was in connexion with scarlet fever

Dr. J D ROLLESTON emphasised the very low incidence of nephritis in scarlet fever at the present day, and said that for this reason it was difficult to know how far to attribute to treatment what might possibly be simply the natural course of the disease The medical officers of all fever hospitals seemed to agree as to the great dearth of cases of nephritis in scarlet fever , in the fever hospital with which he was connected he was unable to show a single case of nephritis in the first six months of last year to the students That experience was largely paralleled in Paris and other places on the continent The form in which Dr Osman and Dr. Carter gave the alkalies was not mentioned An important question was as to whether prophylactic measures would do harm The only other which had been tried in this disease, as far as he knew, was the administration of urotropin, and that did harm, in that it caused cystitis Urotropin for this purpose had now been given up because of the cystitis it produced He did not think the alkaline treatment would do harm, though the patient probably did not find it pleasant to be given large quantities of alkali

Dr PARKES WEBER said it had always seemed to him that, in one respect, what occurred in fevers imitated what took place when people in health suddenly began to take excessive muscular exercise—there was concentrated urine which showed copious deposit of urates after standing In addition, there was often disagreeable muscular stiffness He thought the giving of a certain amount of bicarbonate of soda prevented or relieved the symptoms due, in healthy people, to excessive muscular exercise, and that therefore alkalies would be useful in fevers Probably urotropin was not likely to be of much use in this connexion If given with alkali instead of with acid, so as to prevent the onset of cystitis, it would be possible to ascertain whether urotropin would be of benefit in this disease prophylactically

Dr J A RYLE said that Dr Osman had modestly refrained from giving any indication of the fact that for several years he had been carrying out a patient and most laborious research on alkaline therapy in nephritis But he had kept his results to himself until he was sure of his ground. The cases treated by him at Guy's Hospital had been most carefully controlled, and he (Dr Osman) had concluded that there was much to be said in support of the method, improvement being possible especially in water-logging nephritis , here the treatment caused disappearance of the œdema and the albumin in a way which was not seen in the absence of this treatment Given a case of scarlet fever, it seemed clear that if the urine was over-acid there was more likelihood of the patient having nephritis than if it was not over acid. The figures so far produced showed how, conceivably, nephritis might be prevented in a certain proportion of cases of scarlet fever by administering alkalies If there was any support for the contention it was very important to pursue the matter further, and he hoped that those in charge of fever hospitals would take note of what Dr Osman was doing, and would afford him help and encouragement in an investigation of real importance

Dr KINGSTON BARTON referred to three kinds of nephritis after or with scarlet fever, and said it was not clear what was the cause of the nephritis in scarlet fever, whether it was the causal microbe or its toxin If the microbe was a streptococcus probably two kinds passed through the kidney. The preliminary symptoms took the form of an acidosis, and that was probably why alkalies did good He asked exactly what alkalies Dr Osman gave It was desirable that pathologists should say what were the causes of the three types of nephritis he had mentioned

Dr OSMAN, in reply, said he agreed that there had been a considerable decrease of nephritis in scarlet fever during recent years The form in which he gave the alkalies in these cases was a mixture containing equal parts of potassium citrate and sodium bicarbonate The reason for selecting this mixture was partly because potassium salts were known to be effective in causing diuresis ; but if large doses had to be given potassium salts could not be given alone, especially not to children, on account of their liability to cause diarrhœa The mixture seemed to obviate that difficulty

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SECTION OF UROLOGY

AT a meeting of this Section held on April 28th, Mr GIRLING BALL, the President, in the chair, Sir THOMAS HORDER spoke on the

MEDICAL ASPECTS OF HÆMATURIA

He gave a list of cases of gross, frank hæmaturia which had been observed in his medical wards at St Bartholomew's Hospital during the last five years In 54 of these hæmaturia had been either the main or a very important and striking symptom The *final diagnoses when these patients* left the hospital were more or less as follows Out of the 54 cases, 20 were diagnosed as acute nephritis, 7 as chronic nephritis, 4 as renal calculus, 4 as infective endocarditis, 3 had infection of the urinary tract which was thought to be the cause of the hæmaturia, 2 were suffering from mitral stenosis (and presumably, therefore, had renal infarction), 2 were cases of purpura, 2 were thought to be of prostatic origin Of the remainder, 4 were diagnosed Addisonian anæmia, polycythæmia (Vaquez's disease), encephalitis treated with hexamine, and hæmaturia probably due to intensive salicylate treatment, whilst 5 cases remained unclassified Of these last 5 cases he thought that 2 came into that very ill-defined group of hæmaturias which had been called essential hæmaturia.

Acute Nephritis

Acute nephritis, continued Sir Thomas Horder, was obviously by far the commonest disease coming nowadays to the physician for hæmaturia. He found it difficult to say which type of infection had the greatest tendency to produce bleeding. In cases in which there was no recognised source of infection or site of focal sepsis, attempts to decide on the pathogenesis were very disappointing. Again and again these cases—the majority of them in children—were admitted to hospital, and a survey of their past history and present condition left a complete blank as to the nature of the infection. Many theories had been advanced, but none of them were borne out by bacteriological or other evidence. With regard to chronic nephritis, he had nothing to add to the accepted views. In patients subject to latent parenchymatous nephritis it seemed to take very little in the way of subinfection to produce hæmaturia. The term "renal epistaxis" had been rather diverted from Gull's original meaning to a group of cases now called "essential hæmaturia." There was no reason why the term "renal epistaxis" should not be applied to a form of bleeding from the kidney which was not associated with vascular changes, but that was not its original meaning. Some authorities stated that bleeding was more prone to occur where a chronic nephritis was syphilitic in origin. To judge by the positive Wassermann in cases of chronic nephritis—if that could be taken as a guide—there was, in the four cases of which he had notes, no special tendency to bleeding; but it was sometimes said that syphilitics tended to a hæmorrhagic type of nephritis.

Renal Calculus.—Infection.—Heart Disease.

His next group consisted of cases in which there was renal calculus. He sometimes wondered if renal calculus could be diagnosed in the absence of hæmaturia, assuming that the radiogram was negative. There was a danger of overlooking a calculus when infection was also present and easily demonstrable. Another group of cases comprised those in which there was acute infection of the urinary tract. One very deceptive case in this group showed a papillomatous condition of the bladder; the patient had had chronic cholecystitis for some time, but the urinary tract infection was quite marked. It was, perhaps, necessary to be on the look-out for a double cause of hæmorrhage—i.e., papilloma in the pelvis of the kidney plus some infection of the urinary tract. Two of the cases in his list were labelled prostatic. The patients were men over 60 years of age, and the diagnosis was made in conjunction with a surgical colleague. One of the patients had hyperpiesis, which might have increased the tendency to bleeding.

Turning to hæmaturia in association with heart disease, Sir Thomas Horder said that there were three heart conditions illustrated in his group—namely, septic endocarditis, mitral stenosis, and dilated heart. One of the cases of infective endocarditis was that of a girl of 18, who complained greatly of pain, so much so that he thought there must be some feature other than septic infarction, but she died in hospital from cerebral embolism, and there was nothing found post mortem to account for the pain except renal infarction. Coming to certain blood states, he mentioned two cases of purpura, both of them of Henoch's type. The relation of purpura was a very complex one. The kidney might bleed as an expression of the purpuric state. The toxic element causing purpura might cause the kidney to bleed, but hæmorrhages into the kidney themselves caused renal changes very closely allied to, if not identical with, nephritis, so that it was sometimes very difficult to say what was the sequence of events. The case of polycythæmia (Vaquez's disease) was very interesting. A woman had been under observation several times in St. Bartholomew's Hospital and elsewhere for retinal hæmorrhage and other conditions. A few hours after sea-bathing she had an attack of hæmaturia, which persisted for the six weeks until her death, and the loss of blood was so considerable as to reduce what had been a polycythæmia down to figures which were just about those of the normal count.

Of the unclassified cases (five), he felt sure that one, or perhaps two, would be put down as essential hæmaturia by those who considered that there should be a group of cases of hæmaturia to which that professional label was given. One of these unclassified cases was that of a patient with aneurysm of the thoracic aorta; she had a profuse hæmaturia four days before death. Another case might possibly be regarded as a calculus or nephrolithiasis. The most typical case of essential hæmaturia was in a man of 33 (from literature he noted that most of these cases occurred between the ages of 20 and 40), who, in 1921, passed blood in the urine. He was examined with the cystoscope and nothing wrong was found. Up to March, 1923, he came back to the hospital three or four times with short attacks of hæmaturia. Nothing in his condition or his past history suggested a reason why he should have this tendency to bleed. Radiology was quite negative, and he had no dysuria. There were no signs of arterial changes, no hyperpiesis, no albumin or mucus in the urine. He did not know what had happened to him since, but he regarded this as a type of case which might go under the name of essential hæmaturia. Amongst his list of cases there did not happen to be an instance of tuberculosis, or of hæmaturia as the result of drugs, except hexamine. This was a case of acute encephalitis. The patient was given not a heroic dose of hexamine—20 gr. six-hourly—and at the end of the third day there was a profuse hæmaturia.

The PRESIDENT said that Sir Thomas Horder's remarks had illustrated the desirability of collaboration between physicians and surgeons in such a field as this. Many cases which used to be called essential hæmaturia were now, as a result of more perfect methods of investigation, classified in other categories.

Dr. GEORGE GRAHAM thought it remarkable that in cases covering five years in the medical wards there should not have been an instance of oxaluria. He mentioned a case of hæmaturia in an elderly lady which had come under his observation and in which there appeared to be nothing to account for the condition except the fact that she had been eating a great deal of ginger. The oil of ginger, though nothing like so potent as turpentine, was said to cause hæmaturia.

Sir JOHN THOMSON-WALKER said that it did not seem to him to have been brought out quite clearly whether hæmaturia was the primary or most important symptom, or was only a secondary symptom. At the same time, having had doubts on the subject, he had been convinced by Sir Thomas Horder that there were medical cases of hæmaturia or medical aspects of the condition. Sir Thomas Horder had rather seemed to imply, in speaking of the prostate, that one was likely to get more hæmorrhage in a malignant prostate, but in fact hæmorrhage occurred much more easily and freely from a large œdematous prostate than it did from a malignant prostate.

Mr. HUGH LETT said that in his experience the very worst hæmorrhages in connexion with the enlargement of the prostate were in cases in which stone was present in the bladder as well.

Mr. SWIFT JOLY asked whether in chronic interstitial nephritis it was the common experience to find the bleeding unilateral. He had cystoscoped three of these cases, and in all of them the bleeding came entirely from one kidney.

Mr. NITCH SMITH said that he knew of one man who by accident was given a concentrated solution of hexamine, receiving 480 gr. of the drug, and it did not have the slightest effect in causing hæmaturia.

Sir THOMAS HORDER, in a brief reply, said that the physician saw all cases of hæmaturia as medical cases until he proved them to be surgical, and if the surgeon attended to all cases of hæmaturia as surgical until he proved them to be medical, and both physician and surgeon pursued their respective methods of approach to the bitter end, the patient got the benefit either way.

0 6 per cent nephritis, albuminuria nil The second table embraced the remainder of the cases of scarlet fever in the hospital—i e, those which had not been treated with alkalies—and the 316 cases showed an incidence-rate of nephritis of 2 9 per cent The third table showed a comparison with the figures obtained from a fever hospital for acute cases, an institution which drew its cases from the same localities as that already named The period covered was the same Here, out of 336 cases, there were 7 of nephritis, 12 of albuminuria The total incidence was 5 5 per cent, and it corresponded, roughly, with the incidence in the London area in what could be regarded as a mild type of the disease After obtaining such encouraging results it seemed possible, Dr Carter said, by employing some modification of Sellard's test for alkaline tolerance and giving a set dose of alkalies, to arrive at an opinion as to which cases of scarlatina were likely to develop nephritis during that illness, and to aid treatment by estimating the calcium bicarbonate curve during the course of the scarlet fever

Discussion

The PRESIDENT invited Dr Osman to say why he was led to carry out this alkali treatment and why he considered this method was likely to diminish the incidence of nephritis

Dr OSMAN replied that he had noticed, in the treatment of nephritis of all types, that when the urine of patients was alkaline, the amount of albumin passed was less, and the volume of urine voided was more, than when the urine was acid That led him to a study of the alkalinity of the blood and related questions Whilst working on that, he encountered a case of anuria, caused apparently by a large dose of sanocrysin By giving that patient large doses of alkalies the anuria was overcome, in Dr. Osman's opinion, because of the alkalies It seemed to him possible, therefore, that, in other cases, if metallic drugs were going to be used, the toxic effect of such drugs might be warded off by giving alkalies prophylactically, and in one or two instances that seemed to be the case Then it occurred to him that the experiment might be tried on a larger scale, and that the only condition under which one was likely to meet with a supply of cases of nephritis was in connexion with scarlet fever.

Dr J D ROLLESTON emphasised the very low incidence of nephritis in scarlet fever at the present day, and said that for this reason it was difficult to know how far to attribute to treatment what might possibly be simply the natural course of the disease The medical officers of all fever hospitals seemed to agree as to the great dearth of cases of nephritis in scarlet fever, in the fever hospital with which he was connected he was unable to show a single case of nephritis in the first six months of last year to the students That experience was largely paralleled in Paris and other places on the continent The form in which Dr Osman and Dr Carter gave the alkalies was not mentioned An important question was as to whether prophylactic measures would do harm The only other which had been tried in this disease, as far as he knew, was the administration of urotropin, and that did harm, in that it caused cystitis Urotropin for this purpose had now been given up because of the cystitis it produced He did not think the alkaline treatment would do harm, though the patient probably did not find it pleasant to be given large quantities of alkali

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as the removal of a mole by electrolysis or cautery often left a small scar, such a scar was quickly healed by a quarter or one-third pastille dose of X rays, without suppuration or keloid

General Discussion

The PRESIDENT agreed that vaccines were only of use for acute staphylococcal conditions The theory that eczema was a coccal dermatitis set up by scratching was opposed by the practical experience that protection acted satisfactorily in one case and unsatisfactorily in the next The dermatologist must have many strings to his bow. The speaker had never seen a case of psoriasis benefited by oral administration of arsenic, but a very high pressure needle might do a great deal of good Izal was just as good if not better Cases of lichen planus, on the other hand, did benefit from arsenic and a dozen injections of soamin usually cleared up the trouble In his experience impetigo had become more difficult to cure than it used to be. and hospital cases did better than private ones Possibly a certain amount of dirt and the formation of a thick yellow crust helped in the cure; certainly the mild thin case without crusts took a very long time to clear up He agreed that X rays were dangerous for this condition In pemphigus the whole thing depended on the nursing. He agreed that carbolic acid was good for lichenification. but not better than X rays He thought official silver nitrate solution was better than the recent silver preparations

Dr J MACL. MACLEOD spoke of the value of X rays for superficial wounds and for cracks about the ears and sides of the mouth in impetigo; one-half to three-quarters pastille dose the day after scraping lupus patches was harmless and valuable A few cases of pruritus ani had a basis of ringworm

Dr W KNOWSLEY SIBLEY did not agree that the treatment of eczema should be entirely external Infantile eczema, in his experience always occurred in the overfed, flabby child and went on indefinitely unless the diet were corrected Certain individuals were born with a dry skin which was extremely vulnerable throughout life, very slight trauma would produce eczema For these thyroid was of great value. An important point in the treatment of impetigo was to get the part thoroughly cleansed before the ointment was put on In his experience, many lichen planus patients had had no worry. Ultra-violet light, like X rays, was very good for acne but was quite harmless He preferred to give them alternately

Dr R PROSSER WHITE said he was satisfied there was such a thing as diathesis in eczema. Industrial cases were due to irritation of the skin and were easily cured in a certain time, but there was an idiopathic group which reacted quite differently. His treatment was purely external For the treatment of burns he had found carron oil with a small quantity of hypochlorite very useful He thought izal was bad for the skin because of its detergent action

Dr W. GRIFFITH expressed gratitude to Dr Adamson for laying stress on real methods of treatment and not on fashionable fads and agreed with him that very few skin troubles could be cured by the internal administration of drugs. Much of the reputation of arsenic was unfounded but it was excellent in some of the bullous eruptions, such as dermatitis herpetiformis Nor did he know any skin disease that could be cured by dietetic measures Infantile eczema might occur in any kind of infant Myxœdema could be cured by thyroid, but he did not think ichthyosis could be He thought it important to be definite about the uselessness of vaccines, as so many practitioners sent cases up for vaccine treatment He doubted whether any spa treatment was superior to treatment obtainable in London

Dr G B DOWLING said that carbolic acid treatment of onychia had proved almost invariably successful in his hands He referred to recent work on napkin rashes, and their treatment by soaking the napkin in a 1/4000 solution of perchloride of mercury, which stopped the growth of the bacillus which converted urea into ammonia and so irritated the skin

Dr A C ROXBURGH said that this "napkin" treatment had worked well at St Bartholomew's Hospital.

Dr S. R KAPOOR said there were four types of skin which inclined to show eczematous states sooner or later—the florid, coarse, thick skin, the thin anæmic skin, the seborrhœic skin, and the ichthyotic skin He had had very good results with acid nitrate of mercury in tuberculous conditions, as suggested by Dr Adamson.

Reviews and Notices of Books.

THE MEDICAL ANNUAL

A Year Book of Treatment and Practitioner's Index. Forty-fifth Year Bristol: John Wright and Sons Ltd., London: Simpkin, Marshall, Hamilton, Kent and Co, Ltd 1927 Pp 624. 20s.

THE "*Medical Annual*" is a dictionary of practical medicine and many contributors, most of them for many years, have watched the progress of their specialties on behalf of the editors This stability of outlook makes for a continuous series, so that the habit of reading the "Medical Annual" is rarely lost when once it has been acquired Indeed, though an isolated volume gives much useful information as to recent advances, these can hardly be consolidated in so short a period as one year, and the process whereby discovery is made, doubted, confirmed. and established in routine practice has generally to be sought and followed through several issues of this excellent annual. Those responsible, under the editorial direction of Dr. Carey Coombs and Mr. A. Rendle Short, for compiling the volume include Dr. J. H Anderson, Dr. R G. Bannerman, Dr. Joseph Blomfield, Dr. Charles Corfield, Dr. Ivor J. Davies, Dr Henry Devine, Mr. Norman M. Dott, Dr. F. W. Eurich, the late Dr W. E. Fothergill, Sir Henry Gauvain, Dr. A. G Gibson, Dr. A. M. H. Gray, Major V. B Green-Armytage, Prof. E. W. Hey Groves, Col. L W. Harrison, Dr. C. Thurstan Holland, Dr. Robert Hutchison, Mr. Geoffrey Jefferson, Lt-Col. A. E J. Lister, Mr. J. P. Lockhart-Mummery, Dr. Hugh MacLean, Dr. Reginald Miller, Dr. Joseph Priestley, Sir James Purves-Stewart, Sir Leonard Rogers, Dr. J. D. Rolleston, Dr W. G. Savage, Dr. Edmund I. Spriggs, Sir John Thomson-Walker, Sir W I de Courcy Wheeler, Mr A. J M Wright, and Dr William H. Wynn. The editors in a brief introduction stress the developments which they consider of especial importance and indicate the direction of progress in various subjects In some of the surgical articles mention is made of the increasing use of electrothermic methods of cutting tissues Notable among the medical articles are those on gastric and duodenal ulcer and on gall-bladder disease. Venereal diseases receive full discussion on modern lines; the surgery of the kidney is exhaustively dealt with. while the interest in phototherapy is reflected in the considerable space devoted to this subject; some of the plates in this last-named section could have been spared, since the general benefit of heliotherapy is no longer in any doubt. A note on alopecia areata records good results from the use of carbon dioxide snow; it is claimed by Lortat-Jacob that even in old-standing cases the hair starts to grow again after three or four applications given within three weeks, the patches being rubbed with a blunt pencil of snow until freezing is complete It is refreshing to find from time to time sandwiched between articles which give detailed summaries of recent work the leisurely reflections of Dr. Joseph Priestley, whose short essays give an admirable picture of the trend of thought in the subjects he discusses Altogether this year's "Medical Annual." while it has no outstanding discovery to expound, is one of the best that has appeared.

ST JOHN'S DERMATOLOGICAL SOCIETY.

A MEETING of this Society was held on April 27th, with Dr W S FOX, the President, in the chair

Dr H G ADAMSON opened a discussion on the

Treatment of Some Common Skin Affections

by pointing out how the dermatologist might, from the standpoint of his special subject, attack almost all the problems of medicine and pathology He said that, without wishing to decry the search for new or more scientific remedies, he felt certain that successful treatment often depended more upon skill in applying a few well-known remedies than in the random employment of new methods, many of which had in recent years proved disappointing Vaccinotherapy, except for acute staphylococcal infections, had not helped the dermatologist much Lupus vulgaris could not be cured with tuberculin The most valuable new addition was X ray treatment, but even this was empirical

Passing to special conditions, Dr Adamson expressed the opinion that most eczemas owed their origin to some local irritant, while all were aggravated or kept up by scratching, friction of the clothes, special occupation, or inappropriate treatment Protection from external irritants was the essential treatment for eczema A common protection was zinc oxide paste, which should be thickly spread on pieces of open-wove bandage, applied like plaster and firmly bound on Lint must not be used and the covering layer of wool must be as thin as possible Twice daily the dressing was wiped off very gently with liquid paraffin and renewed "Thorough cleaning up" of affected areas often delayed cure The advantages of tar, of sulphur in seborrhœic eczema, and of small doses of X rays in all cases were well known When progress was slow lenigallol, 15 gr, might usefully be added to each ounce of the zinc paste He had no faith in internal remedies or dieting

Psoriasis and Lichen Planus.

Probably all dermatologists used the same methods for psoriasis—mild mercury ointments, tar, chrysarobin, arsenic, &c —but an important point was that the ointment should be well rubbed in Some cases would get well with a simple vaseline if only it were painstakingly applied Dr Adamson's favourite application was a paraffin ointment containing 10 gr. of hydrarg ammon chlor and 1 drachm of liquor picis carb to the ounce Much of its efficacy seemed to be due to the hard paraffin base A useful remedy for psoriasis of the scalp was undiluted liq picis carb rubbed in with a cheap pastebrush with its bristles cut short Salicylates or salicin internally had a beneficial controlling effect in cases of acute psoriasis with widespread small-pattern eruption Salicylates also cut short the duration of pityriasis rosea If the patient would submit to a thorough course of treatment in bed for at least a month, chrysarobin would generally clear up extensive and obstinate cases of psoriasis

The only known ætiological feature in lichen planus suggesting a line of treatment was worry or overwork, and of all methods the rest cure was the best Many cases cleared up very quickly with rest in bed, but for more chronic cases this must be combined with local treatments, of which the best was daily painting with silver nitrate, 10 gr in one ounce of spirit of nitrous æther

Impetigo Contagiosa, Acne, and Pemphigus

In the majority of patients impetigo ran its course in three weeks, whatever treatment was given, but in more persistent cases the period of recovery was generally shortened by daily mopping with silver nitrate solution Three or four applications of ultra-violet light would usually cure impetigo at any stage X rays, which made this condition spread more rapidly, were very efficacious for acne when carefully applied Patients should be told never to touch the face, squeezing and picking the spots kept up the eruption and caused excoriations Pemphigus in children was generally cured by confinement to bed, this measure was helpful with adults, as also was a daily bath Instead of an ointment, paraffin No 7, applied as for burns, added to the patient's comfort Small doses of tincture of opium benefited the nervous system and had a curative effect

Some well-known Remedies

Hot boric or saline fomentations were valuable in furunculosis, impetigo, septic wounds, and crusted lupus, but they were often used wrongly They must be large, hot, and changed every 10 or 15 minutes for an hour or two, alternating with dry dressing Many diseases of the skin were best treated in bed where continuous treatment could be given and constant irritation of the skin avoided Rest in bed was the only thing that would lead to marked improvement in general pruritus, pemphigus, lichen planus, and lupus erythematosus General pruritus without obvious cause would often disappear completely after a few days in bed The good results in lupus erythematosus might perhaps be due to non-exposure to light and changes of temperature. Pure carbolic acid applied to a perfectly dry skin had no immediate effect, and if wiped off with methylated spirit had no caustic action At the worst its caustic action was not deep Its desquamating power might be used for destroying freckles and for pruritus The acid was painted on to the freckle with a pointed match-stick and the pigment was permanently removed without scarring Senile warts could be removed by pressing the acid on firmly with a piece of wool held in forceps

Pruritus

A common form of pruritus, occurring only in women, was associated with one or more sharply-circumscribed patches of lichenification at the nape of the neck A pastille dose of X rays would usually stop the itching, but removed the hair Carbolic acid swabbing was quite as effective In most cases of pruritus ani or vulvæ there were found either patches of lichenification due to rubbing, or else radiating fine shallow fissures, or both together The fissures could be effectively healed by touching with a finely-pointed match dipped in pure carbolic acid The lichenification patches should be mopped with silver nitrate in spirit ætheris nitrosi Immediate relief followed, but permanent cure was ensured by an application of X rays, five-sixths of a pastille dose, repeated after six weeks Another use for carbolic acid was on a tiny shred of wool which, pushed between the nail fold and the nail, would quickly cure onychia

Uses of Silver Nitrate

Tincture of iodine might well be supplanted by 15 gr. of silver nitrate in an ounce of spirit of nitrous ether Iodine produced local inflammation which often masked the original complaint and might start a widespread dermatitis or even pemphigus The nitrate was efficient in tinea circinata and cruris, and eczematoid ringworm of the feet Often one or two thorough swabbings would cure a tinea cruris of long standing, and it was useful in any superficial microbic infection of the skin It was best applied by means of a small swab of wool held in forceps and well pressed into the affected area It had a well-known value in obstinate and infantile eczemas The relief it afforded to itching made it useful in lichenification and senile pruritus Lapis divinus, a mixture of copper sulphate, potassium nitrate, alum, and camphor, fused on the end of a probe, was an excellent remedy for fissures in the nostril and for acne pustules For electrolysis of hairs the most useful needle was a smooth dental "nerve broche," which did its work without leaving a scar Another useful tip was to place a strip of zinc oxide plaster round the fore finger of the left hand so that the hairs collected on its sticky surface Such little cosmetic operations in detail The complications of gonorrhœa in both sexes are fully discussed. The chapter on gonococcal vulvo-vaginitis in children is good, and the metastatic complications are not neglected. In this connexion treatment of the original focus by diathermy deserves fuller discussion than it receives in two lines on p 489 In the treatment of gonorrhœa of pregnancy Mr Lees says that tampons should not be inserted in the fornices or vagina as they tend to produce abortion There may be a difference of opinion as to the value of tamponage, but in our experience fear of producing abortion would not be a contra-indication Has abortion really been caused in Edinburgh by this treatment or is Mr. Lees quoting a traditional belief? The book concludes with an admirable pharmacopœia covering every possible medication that may be needed in the whole range of treatment of syphilis or gonorrhœa.

Mr Lees's work may be recommended for its practical common sense no less than for its medical and scientific value.

Anatomy of the Central Nervous System.

Anatomie Topographique du Système Nerveux Central By Georges Guillain, Professor of Clinical Neurology, Faculty of Medicine of Paris, and Ivan Bertrand, Director of the Laboratory of Pathological Anatomy, Clinique of Neurology, Faculty of Medicine Paris Paris · Masson et Cie 1926 With 60 original plates Pp 322 F 80

Following the best traditions of the French school of neurology, the authors of this handsome atlas of neural anatomy rely for their hope of its practical usefulness on the necessity of pursuing the clinico-anatomical method in neurological instruction, a method in which they express their profound belief Correlation of clinical phenomena with pathological findings has always been advocated in France as the ideal procedure if medicine is to advance, and pathology has its basis in anatomy. Leaving aside neurophysiology, and omitting all unnecessary application to clinical cases as being outside their immediate purpose, they have produced an atlas of pure anatomy, both macroscopical and microscopical, which is intended for the student of neurology Anatomical details, so far from being minimised, are intentionally stressed, and accurately tabulated, in a series of 60 beautiful plates reproduced from original photographs and drawings, which as far as clearness is concerned leave nothing to be desired With this guide at hand the student will find his way through the complexities of neuro-anatomy without difficulty. The text is simple and lucid, the arrangement logical; all the volume lacks is a decent index.

Taken as a whole, this new topographical atlas of the anatomy of the nervous system reflects the greatest credit on both authors and publishers, and will at once find its sphere of practical value in laboratory and study.

Peripheral Palsies

Die peripherischen Lähmungen; Diagnostik, Untersuchungstechnik, Prognostik, und Therapie By Prof Dr Toby Cohn, Berlin Berlin and Vienna Urban and Schwarzenberg 1927. With 64 illustrations. Pp. 320. Mk.18

This book on peripheral palsies, motor and sensory, cranial and somatic, reaches a high level of attainment It is about equally divided into a general part, containing full descriptions of methods of examination, ætiology, pathological anatomy, prognosis, and treatment and a special part, in which cranial and peripheral nerves are taken seriatim and their symptomatology minutely investigated. Due attention is given to the rarities as well as to the commonplaces, and this, together with a good index, a fine bibliography, and satisfying illustrations, makes it a volume well worth adding to the neurologist's library The fact that new diagrams of the motor points on the skeletal muscles take the place of those of Erb, which have done duty for half a century, is of itself a comfort to the reviewer.

Detailed criticism of the work is rather out of place, seeing that it of necessity embodies a mass of anatomical and clinical data through which one can scarcely hunt for possible errors or other sins, positive or negative; it is for reference more than for systematic perusal We note in passing that the author inclines to the view of a sympathetic origin for some types of pain—e.g, that of causalgia—without as we think supplying adequate proof of the theory or realising sufficiently the equivocal results of some operations on periarterial plexuses That cervical rib may occasion at one time a median, at the other an ulnar paralysis is duly recognised, but the partial character of the former is not sufficiently insisted on or illustrated. On this point differential diagnosis to some extent at least must depend

The Red Nucleus

Die Bedeutung der roten Kerne und des übrigen Mittelhirns für Muskeltonus, Körperstellung und Labyrinthreflexe By Dr. G. G. J. Rademaker, Utrecht Translated into German by Dr E Le Blanc, privatdozent at the University of Hamburg Berlin · Julius Springer. 1926 With 212 illustrations Pp 340. M 27

Dr. Rademaker's masterly investigations of the functions of the red nucleus and the mesencephalon generally were published in Dutch and the opinion was widely expressed that their appearance in another language somewhat more accessible to the average student of the nervous system was a desideratum. Hence the publication of the monograph in a German garb It has already taken its place as one of the outstanding contributions to neurology of recent years, and as exemplifying in a striking fashion the value of the methods of the experimentalist. The subject is highly technical and possibly of somewhat limited interest, but its appeal to the specialist is unmistakable. Very briefly, the purpose of the research was to define and determine the anatomical centres and tracts responsible for the activities of some of the reflex mechanisms studied and described by Prof. Dr. R Magnus In this effort the author has succeeded very materially, and his conclusions have been accepted by other workers at the same problems It is impracticable to give an adequate resume of these in small space, and we shall be content to recommend its careful study to all who are interested in the minutiæ of midbrain anatomy and physiology.

Life and Evolution.

By William Tibbles, LL D, L R C.P., M R C S. London: John Bale, Sons and Danielsson, Ltd. 1927. Pp 233. 6s.

Dr. Tibbles evidently has much wider interests than are indicated in that useful book "Foods · their Origin, Composition, and Manufacture," and he gives here revised versions of a number of popular addresses which range over a large field of soluble and insoluble problems The first three chapters are on life, matter and force and cause and effect. and their general argument is that the materialistic interpretation of life is incomplete and unsatisfying and that the cause of the world as we know it is God The last five chapters are more direct and give an excellent elementary account of evolution especially the evolution of man and of the English man in particular. The tale he tells is necessarily rather a dogmatic version of many matters on which there is no really certain knowledge, but it is straightforward, comprehensive, and interesting, and he takes the cheerful view that the study of the past is meant to help us solve the future The whole forms a book which should be useful and stimulating to lay readers; it provides also some good outlines for popular lectures

THE SLIT LAMP

An Illustrated Guide to the Slit Lamp By T. HARRISON BUTLER M A , D M Oxon , late Radcliffe Travelling Fellow of the University of Oxford , Honorary Ophthalmic Surgeon to the Coventry and Warwickshire Hospital London Humphrey Milford, Oxford University Press. 1927 Pp 144 30*s*

THE use of the slit-lamp in conjunction with the corneal microscope is the most important advance in the technique of ophthalmological diagnosis which we have seen in recent years To acquire familiarity with it, however, needs time and special teaching which it is not too easy to obtain Mr Harrison Butler went to Switzerland and obtained his teaching from Prof Vogt, whom he regards as the greatest authority on this subject, having created what amounts to a new science

This book is the outcome of Prof Vogt's teaching and of Mr Butler's own work during the last three or four years Those who have access to an instrument and are prepared to give up the time necessary to acquire familiarity with it will undoubtedly find this book an enormous assistance It is copiously illustrated by over 147 figures and five coloured plates, some diagrammatic, but many of them illustrating appearances which Mr Butler has himself observed So far it is the crystalline lens on whose structure the slit-lamp has revealed the most striking new knowledge By the use of the " narrow beam " we are enabled to see a series of highly illuminated sagittal sections, and as the different layers have different refractive indices some of them show brighter than others In this way various regions are mapped out By the use of the " broad beam " and focusing, the various surfaces can be examined in a detail never before approximated to The practical importance of the slit-lamp in diagnosis has as yet not received any wide general recognition The chief practical points on which Mr Butler lays stress are (1) the estimation of the depth of opacities in the cornea, (2) the diagnosis of the nature of " K P " spots, (3) the detection of the presence of solid flakes in the aqueous and retrolental space, a matter which may be of decisive importance in the diagnosis of sympathetic ophthalmia , and (4) in the exact estimation of the situation of opacities in the lens From the point of view of medical jurisprudence he shows by actual examples how important slit-lamp evidence may be, for instance, in distinguishing between recent and old opacities in cornea and lens

It is a book which will be very highly valued by all users of the slit-lamp

X RAYS PAST AND PRESENT

By V. E PULLEN and W J WILTSHIRE London. Ernest Benn, Ltd 1927 Pp 229 12*s*. 6*d*

IN a preface the authors state that they have written this book with no ambition of producing a scientific treatise, but with the object of telling the story of X rays by means of a panoramic sketch for the benefit of the interested layman The result of their labours is the clearest and most readable exposition of the subject that we have yet seen A brief but lucid historical section, occupying two chapters, explains the various stages in knowledge that led up to the discovery of X rays This discovery was in no sense accidental, but inevitable, since many observers were actually producing rays which they had not recognised as the source of disconcerting phenomena which they could not interpret The next chapters deal with the nature of X rays, the researches which culminated in the discovery and weighing of the electron, and the brilliant work of J J Thomson, Rutherford, the Braggs, Moseley, and many others Incidentally the large share of the meteoric advance in knowledge, due to these and other English physicists, will strike every reader Other chapters follow, brief but adequate, on X rays and crystals, X ray spectroscopy, and on various applications of X rays in science and industry. The book well fulfils the purpose for which it was written

The authors have succeeded in explaining nearly all the difficulties in such simple language that they have not had to resort to the formulæ which are the language of the physicist, and the stumbling-block of the layman They have succeeded in conveying to the reader their own infectious keenness and the element of romance that goes hand in hand with all true research

DISEASES OF BONES AND JOINTS

Études sur les Affections des Os et des Articulations (Colonne Vertebrale exceptée) BY ANDRÉ LERI, Professeur agrégé à la Faculté de Médecine de Paris, Médecin de l'Hôpital de la Charité Paris Masson et Cie 1926 Pp 460 Fr 58

THIS book is a sequel to that by the same author on affections of the vertebral column, which was noticed in our issue of Jan 15th, 1927 Like that work it consists of a number of short articles on affections of the bones and joints, and they seem to be reprints of contributions by the author alone or in collaboration with other well-known authorities to various publications

It is difficult adequately to sum up a book of this kind because of the great number of subjects ; 58 communications are here reproduced However, those who are seeking records of rare conditions of bone and joint disease will find it of value, and perhaps also those who would study different points of view of certain diseases The author in his introduction disclaims any intention of supplying a précis or handbook for the student Articles are grouped together under the headings of I Diseases of Bones, and II Diseases of Joints The first part is divided into diseases of development and malformation, and acquired diseases of bone, while the second deals with rheumatism and arthritis and their pathogenesis and treatment It will thus be seen that tuberculosis of bones and joints is excluded The most important articles are those on rickets and on Paget's disease The section on treatment of chronic rheumatic affections is interesting ; the author thinks that the good effect in these maladies of thermal springs and mud is due to radioactivity Since 1921 he has been following the suggestion of Prof Gabriel Petit and using intramuscular injections of bromide of thorium X , the dose being regulated by the radio-activity of the drug, as compared with that of crystallised radium bromide This treatment does not affect bony deformity, but relieves pain, and this relief puts an end to reflex contraction and allows physiotherapeutic measures to be applied The results obtained were encouraging The book is illustrated with 128 figures

VENEREAL DISEASES

Diagnosis and Treatment of Venereal Diseases By DAVID LEES, D S O , M A , M B , F R C S , Surgeon in Charge of Venereal Diseases, Royal Infirmary, Edinburgh Edinburgh E and S Livingstone 1927 With 87 plates Pp 605 15*s*

IN this new work Mr Lees has brought together in a readable form the latest ideas and technique in the diagnosis and treatment of the three venereal diseases In the first part of the book syphilis is fully considered, and the recognised pathological tests which may be employed in its diagnosis are described Treatment is clearly and fully discussed, all the modern drugs and their mode of application being given in detail, and tables of treatment of the different stages of syphilis are included Some of the plates in this section will prove of great value, particularly to the student or young practitioner who gets little chance of observing syphilitic rashes owing to their rapid disappearance under modern therapy.

In the second part gonorrhœa is dealt with most thoroughly, and treatment is here also described

THE LANCET.

NDON SATURDAY, MAY 7, 1927

JEEN CHARLOTTE'S HOSPITAL

iblish in another column a weighty manifesto obstetric surgeons who, under the title of the Mothers," plead with the public for a of a million of money for the erection of new s to provide more beds and greater facilities ntific training in connexion with Queen e's Hospital As everyone knows, the y from childbirth is still deplorable, and the nt chart, which appears in the manifesto, at a glance that this mortality has shared in the reduced mortality among women from es or in the reduced infant mortality which n an increasingly marked feature of the vital 's of the present century Many of these il deaths are undoubtedly preventable, and n addition to the beds at a centre like Queen te's Hospital would mean a great deal, far ould be meant by larger opportunities for the of medical students and of student midwives whole science of midwifery and obstetrics is admitted that medical students are still d in these subjects, as far as the metropolitan schools are concerned in a desultory manner, must remain the case, although the strenuous of many teachers and the improvement in have recently been apparent, as long as hospital ions remain so imperfect There is no doubt edical students do not obtain the same oppor-'s for clinical education in midwifery and rics that they do in other branches of medicine, absence of sufficient maternity wards to which udents could have access hampers them and nstructors alike

he study of midwifery and obstetrics, as it now s in this country, there are things of the highest ance which require general consideration— which affect the public and the medical ion alike There are large factors inherent in actice of to day which affect throughout the ent of difficult labour and their significance is ly felt They have been set out with detailed ations by a group of authorities in an Extra r of THE LANCET[1] some two years ago and the n teaching of all was that the practice of mid-now means, above all things, the avoidance of and the early recognition of abnormal con-notification of sepsis becoming necessary when line of defence, prevention, has been breached t sufficiently considered that the medical man, face to face with emergency, is little aided by the knowledge that the situation need not have arrived if due preventive methods had been taken? And the only way in which the knowledge of what preliminary precautions ought to be observed can become the general property of practitioners or midwives is to offer opportunities for obstetrical consultations, where apposite bacteriological examinations have been arranged for, where the necessary number of maternity beds can be found, and where a system of antenatal care can be organised as a model "The antenatal care of pregnant women has been demonstrated to be one of the most valuable of all forms of preventive medicine," says the surgical manifesto "It must be considered as the most important modern development of obstetrics, and one of its chief activities Failure to provide facilities for antenatal treatment is one of the most conspicuous pieces of evidence that maternity hospitals are not keeping pace with the movement, and experience emphasises more and more strongly the vital need of preventive methods" These words furnish the reason why so many women still die in childbirth or suffer ills arising from the discharge of a natural function, for it must be remembered that, on the top of the maternal mortality, a large percentage of all the conditions for which women seek relief either in hospital or in private practice are definitely connected with the ordeal of childbirth More maternity beds are urgently required in order that the education of those concerned in the actual care of the women should be properly conducted, and that the teachings of modern science should become part and parcel of routine practice

The appeal issued by Queen Charlotte's Hospital demands the public help in a direction where all can appreciate its urgency and the authorities in asking for £250,000 to be used for the construction of new buildings and for the promotion of research are able to show, not only the necessity for finding the money, but the proof that the money, when found, can be immediately and definitely employed for its objects With the capital sum which it pleads for the hospital will provide modern wards, fully equipped, for another 75 beds, single private rooms for middle-class paying patients, completely equipped pathological laboratories, special facilities for research into childbirth fever, and the machinery for training more doctors, students, and nurses It is proposed, we learn, that the money should be shared almost equally by endowment, and building and equipment As the freehold of the adjoining ground is already owned by the hospital, no time will be wasted in the expensive and wearisome task of securing a site Those who give promptly—and there should be many, for the appeal is to manifold sympathy—will see a prompt result

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LOOKING AT THE SUN

IN clear weather it is only at sunrise and at sunset that we can with comfort look directly at the sun with the unprotected eye At these times the great distance of atmosphere through which the sun's rays have to travel before reaching our eyes serves to diminish their intensity to a point within the limit of safety. When the sun is high the eyes are protected from glare by the lid and brow, and if we attempt to look up at the sun's disc we are dazzled and instantly turn our eyes away If in spite of being dazzled we persist in looking, we run a great risk

This risk, as Sir ARNOLD LAWSON and Mr A L WHITEHEAD pointed out in an article in our columns last week (page 949), is one which is likely to be taken

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rn Methods in Abnormal and Difficult Labour FT Extra Number Pp 140 With many illustra-

ULTRA-VIOLET THERAPY

Ultra-violet Radiation and Actinotherapy Second edition By ELEANOR H RUSSELL, M D., B S Durh, and W KERR RUSSELL, M D, B S Durh, Hon Actinotherapist Sun-ray Clinic, Newcastle-on-Tyne With forewords by Sir OLIVER LODGE F R S, D Sc, LL D, and SYDNEY WALTON, C B E, M A, B Litt Edinburgh E and S Livingstone 1927 Pp 429 15*s*

ENLARGED from 262 to 429 pages, the authors' second edition follows the same general lines as the first The chief enlargement of the book appears to be in those sections devoted to the technique of therapeutic work and in the account of the various ailments for which ultra-violet radiation is useful Illustrations are abundant throughout; no less than 65 are to be found in the two chapters devoted to a description of the various artificial sources of ultra-violet radiation Readers requiring information on the technical or medical side of ultra-violet therapy will find what they want in this book

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Les Radiations Lumineuses en Physiologie, et en Therapeutique By A-C GUILLAUME Paris Masson et Cie 1927 Pp 515

THIS book is unusual The author warns the reader in his preface that he will here find no practical guide to actinotherapy nor manual on the subject, but rather a series of experimental studies bearing upon actinotherapy from different aspects, these studies take the reader into various fields, in some of which the way has sometimes been clearly found by well-designed experiments in others there are still no signposts to give confidence to the casual wanderer

Dr Guillaume's approach to the subject is from the experimental side; he disclaims any special knowledge of actinotherapy He is, in fact, more concerned with the setting of the stage than with the acting upon it, and indeed he adopts a critical attitude on what the actors choose for their play However a discussion as to what diseases should or should not be treated by actinotherapy is included in one of the final chapters The chapters on the local and generalised action on the skin and body of various forms of radiation are exceedingly interesting, and the phenomena of sensitisation and of protection are fully described A whole chapter is devoted to the fluorescence of tissues and their examination under beams of pure ultra-violet radiation

The scientific scope of the book is wide, and it will be read with profit by many who have no special interest in the particular form of therapy that is considered No reader can fail to be impressed with the efforts which are being made to elucidate some of the complexities inherent to the study of radiation in its effects upon living things

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JOURNALS

QUARTERLY JOURNAL OF MEDICINE —The April number contains the following articles · An Attempt at the Clinical Classification of Premature Ventricular Systoles, by Geoffrey Bourne Twenty-eight cases were examined in which premature ventricular systoles occurred fairly frequently The effects of exercise, amyl nitrite, and atropine upon their occurrence, in association with their relationship to heart disease and heart failure were investigated The results showed, amongst other things, that standing increases the number of premature beats, exercise augments their occurrence after the deceleration period in cases with arterio-sclerosis or with coronary disease, the reverse holding good for normal or rheumatic hearts —Observations upon the Circulation-rate in Man by the Ethyl Iodide Method by H Whitridge Davies and A Rae Gilchrist In 1925 Henderson and Haggard in America published a method for estimating the circulation-rate in man by inhalation of ethyl iodide It can be rapidly effected and causes no discomfort to the subject In the present paper the authors describe certain modifications of the technique, and the results of 118 observations on 18 individuals under varying conditions of posture, temperature, activity and metabolism —Fractional Analysis of the Gastric Contents: a Preliminary Note on the Variation of the Free Hydrochloric Acid and Total Chlorides in the Upper and Lower Parts of the Stomach, by Robert J Duthie Several observers have noted the variations obtained in fractional gastric analysis in the same individual on different occasions The author here uses a double stomach-tube, the orifices being 8 inches apart This was swallowed, and samples could then be obtained simultaneously from the pyloric and cardiac regions of the stomach The position of the tubes was controlled by X ray examination In the three cases examined differences in the free acid and total chlorides were found in the upper and lower regions of the stomach during the digestive cycle —An Investigation of Gastric Function in Chronic Arthritis and Fibrositis, by S Miller and F B Smith Two hundred and fifty cases of chronic arthritis, in whom the disease was still active, were investigated by means of fractional test-meals and examination of the fæces and urine for streptococci Although achlorhydria and hypochlorhydria were found to occur five times more frequently than in health, yet their incidence was only slightly greater than that found by other observers in a series of other diseases A similar slight preponderance of streptococci in the fæces, as compared with those obtained in other diseases, was also found The diminished acidity is not therefore considered to be a primary factor in the ætiology of the disease —The Effect of Mineral Acid in Acid-Base Regulation in Health and in Nephritis, by Geoffry C Linder The permanent readjustment of the acid-base equilibrium in the blood depends upon the action of the kidneys, and the author describes observations on the power of the kidneys in this respect in varying states of health and disease Dilute hydrochloric acid was given to four normal people and to six patients with nephritis for periods of two to four days, and the changes in the blood and urine were studied The results obtained are detailed in this paper, and in two patients whose renal function was greatly impaired severe acidosis was produced —Heredity in Simple Goitre, by W Russell Brain In a series of six families there were 26 cases of simple goitre, and in two of these families cases recurred in four successive generations In another series of five families 12 cases of simple goitre occurred, associated with congenital deaf-mutism A hereditary predisposition does appear to be a factor in the ætiology of simple goitre in some cases, and the incidence of goitre is further considered in relation to Mendelian laws —Radium and the Blood Cholesterol, by Charles E Brunton The blood cholesterol in a series of patients suffering from cancer was found to be about normal No definite variation was found in the blood cholesterol of cancer patients after treatment by diathermy or by radon —The Clinical Duration of Saccular Aortic Aneurysm in British-born Subjects, by G H Colt Seven hundred and seven cases of saccular aortic aneurysm have been collected from the literature, and their clinical duration noted from the first date of the longest recorded symptom The cases have been considered statistically, and it is hoped that the graphs prepared will be of value for prognosis —The Effect of Administration of Parathyroid on the Serum Calcium by C P Stewart and G H Percival The serum calcium was estimated in 11 cases before, during, and after the administration of parathyroid (Martindale) In every case the calcium was stationary, and normal or slightly above normal before the parathyroid was given, but rose as the result of the parathyroid administration —The journal concludes with an account of the twentieth annual general meeting of the Association of Physicians of Great Britain and Ireland, held at Newcastle-upon-Tyne in May, 1926

European medicine and a great number of journals and pamphlets All the six libraries described in the Rockefeller report are, indeed, conducted with the highest kind of medical knowledge in view and on the most advanced modern principles

The medical profession is perhaps better supplied than any other with exhaustive catalogues and library helps of every kind In the fine library of the Harvard Medical School there are some 45,000 volumes, over 100,000 pamphlets, and the number of current periodicals is over 400. But the student is not left at sea among all this, for "the attendants in all the rooms answer all inquiries and try their utmost to supply the information desired" The librarians, Dr Elliott P Joslin and Frances Whitman, "take pleasure in giving assistance" We can well believe it, and the same may be said of medical librarians all the world over The library of the Washington School of Medicine, St Louis, under the skilled management of Miss Etta Lawrence, now numbers well over 33,000 volumes, having risen from a nucleus of 3000 volumes in 1910 Unlike most very modern collections, this admirable library, "classed with the best libraries of medical schools," possesses antiquities in the shape of the Beaumont Collections These consist chiefly of the note-books in which for years Dr. William Beaumont, the pioneer American physiologist who was also F R C S England, set down his observations of the workings of the gastric juice through the fistula in the abdomen of Alexis St Martin A library which promises very well, though it is at present small, is that of the Queen's University, Kingston, Ontario It forms part of the large university library of 175,000 volumes At McGill University the medical collection is extensive, amounting to some 60,000 volumes It is more than a century old, having been founded in 1823. In 1907 the Osler Library was erected, and here are housed the 7000 odd volumes, which it was the life-work of that fine bibliophile, Sir William Osler, to collect. The Osler Library has a noble appearance worthy of him whom it commemorates The Rockefeller Foundation has issued the report in pamphlet form, as the sixth instalment of a larger work, which will doubtless contain descriptions of the famous medical libraries of London and of the Surgeon-General's Library at Washington, as well as of those of the Continent of Europe

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ADDITIONAL INSURANCE BENEFITS

THERE is gratifying evidence that the scheme of the Insurance Acts is now being developed along preventive lines Last month, in reply to a question by Sir John Power in the House of Commons, the Minister of Health gave some interesting figures showing the extent of additional benefits granted to insured persons during the year 1926 (THE LANCET, April 23rd, p 901) During this twelvemonth a sum of more than one million pounds was expended on dental treatment and nearly a quarter of a million on treatment in hospitals Much of this dental treatment is of a preventive nature and, along with the medical inspection of school-children and dental treatment at school clinics, it cannot fail to react in the course of time on the incidence of sickness The amount spent on treatment in hospitals and the £7000 on provision of nurses might well have been much larger, for both of these are essential services for the restoration of the sick worker to normal health. No information was given as to the amount of additional benefit given by way of increase in the ordinary cash benefits, and so no material is available to judge what relation this outlay bears to the one-and-a-half millions spent on specified additional benefits, but it is to be hoped that the latter fund will go on increasing, when there will soon be manifest some improvement in the efficiency of the workers and some reduction in the time lost from incapacity The figures given by the Minister of Health are evidence that the problem of preventing sickness is being seriously tackled by the approved societies

Annotations.

"Ne quid nimis"

THE BRINE BATHS OF DROITWICH

THE ancient township of Droitwich lies in a hollow of the beautiful Worcestershire hills, and 200 feet beneath it is the inexhaustible bed of salt which has provided brine for commercial and therapeutic use since Roman times The water, which used to well up to the surface but now has to be pumped, is unique among the mineral springs of the world in its concentration—ten times stronger than sea-water, 40 per cent stronger than the waters of the Dead Sea, and among mineral springs approached only by those of Rheinfelden and Bex in Switzerland The water is only available on the spot, for Droitwich believes, with much show of reason, that the full effects of the brine cannot be obtained from redissolving the evaporated salt, and that the high degree of radio-activity present in the fresh brine would be dissipated by evaporation or during long transit There is little, if any, accurate knowledge as to the precise action of brine baths on the various systems of the body. Salt-water baths are reputed to have a much more stimulant effect than have ordinary baths of the same temperature, and Droitwich repeats in season (and perhaps out of season) the story of the rediscovery of the stimulating properties of the brine when the contents of an evaporation pan were used in emergency for a collapsed cholera patient a century ago. The influence of salt water on metabolism has been the subject of much experiment and discussion, but, as Dr. Huggard said 20 years ago,[1] no very positive conclusions have been obtained, and the same is largely true at the present time Testimony to the chemical activity of the brine is borne by the corroded taps and discoloured walls of the old baths, which the new installation completely masks by its vulcanite fittings and vitrolite panels The buoyancy of the water is such that the immersed body or limb is completely supported, so that stiff and partly paralysed muscles are enabled to move on their own initiative with little expenditure of energy Active movement of this kind is a unique feature of the brine bath, and war-time experience not only suggested its great utility but the possibility of its taking the place to a large extent of massage and passive movement The doctors of Droitwich are all busy general practitioners, with little time to devote to the why or the how of the good results of which they are daily witness, and at his visit last week, recorded on another page, Mr Neville Chamberlain gently chid them for an omission which may be preventing Droitwich from being useful on the scale which it merits Mr Chamberlain was careful to explain that he was speaking as one of the trustees of the Corbett Estate, to which the bathing establishments belong, and not as Minister of Health , but the local medical profession will do well to take his words to heart and in the course of time provide good evidence for the faith which is in them There should, at all events, be no lack of occupation for a full-time biochemist at Droitwich

SPLANCHNIC ANALGESIA

SPLANCHNIC analgesia has been in use since 1914, when M Kappis first reported on it at the Surgical Congress at Berlin Since then H Braun (1919) and G Labat have made important additions to the literature of the subject In our own columns[2] a record of 91 cases has been published by O S Hillman and R E Apperley There has been time, therefore, for the technique of the method to be systematically and thoroughly established and for its thoughtlessly on June 29th next when many people in North Wales and Northern England are hoping to enjoy the only chance in their lives of seeing the corona of the sun surrounding the black disc of the moon Even after any ordinary partial obscuration of the sun a few cases of "eclipse blindness" come under the observation of ophthalmic surgeons The number may be very much larger as a result of the widely advertised total eclipse of June, unless the danger be equally widely advertised The visible and infra red rays from the sun passing for the most part unchanged through the cornea and lens are focused approximately on some part of the retina whenever the eye is at rest and the sun within the field of vision Reaching the retina, these rays pass through its superficial layers without doing any harm until they reach the pigmented epithelial cells at the back, where they are degenerated into heat, which gives rise to a thermal lesion (an ordinary burn) spreading inwards to the retinal tissues and outwards to the choroidal vessels Fixation of the sun's image on any peripheral part of the retina must, however, be a very rare occurrence, and a point lesion, if it should occur, would probably give rise to no inconvenience But at the macula or central spot of distinct vision the case is quite otherwise Here in the normal eye the rays are accurately focused and at a moment of keen interest discretion may be thrown away and fixation of the sun's image occur The macula is the most vulnerable part of the retina, for at this spot the retina is thinnest, all the layers having nearly disappeared except the cones and the pigmented epithelium, while there are no blood-vessels which supply the central spot direct and might help to distribute the heat Hence, if the warning sensation of dazzle is disregarded, a thermic lesion may result, leading to permanent damage at the macula, with pigmentary changes which can be seen with the ophthalmoscope, and at the macula even a point lesion will lead to a visible blank in the field of vision It is thus the red and yellow rays from which the retina runs the chief risk The ultra-violet rays, it is true, cause conjunctival trouble and pain, but they are, it seems, largely absorbed by the cornea and the crystalline lens and therefore do not reach the retina in any dangerous quantity except in young children in whom the lens is very transmissible, or in those whose lens has been extracted by operation

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[1] A Handbook of Climatic Treatment including Balneology. By W R Huggard Macmillan and Co 1906

[2] THE LANCET, 1925, i , 863

We dwell upon this danger to the unprotected eye by no means because we wish to discourage anyone from seeing what he can of the eclipse, but rather to remind would-be astronomers, and especially all who have the care of children, that the danger is as real as the safeguard is simple All that is necessary for a brief survey of the eclipse is to interpose a piece of smoked glass or of fogged photographic film of such a density that the sun when seen through it is no brighter than the setting orb The photographic film is the safer, as the smoked surface rubs easily off the glass when in use A further refinement in precautionary equipment is described in Sir Arnold Lawson and Mr Whitehead's note Untreated film, they *insist, does not afford sufficient safeguard for* prolonged sun-gazing It may remove the glare, but it does not prevent the ultra-violet burn of the anterior structures of the eye, and they have collaborated in the production of a photographic film so treated that all the short waves are cut out completely, made up in a mask at a price designed to bring it within reach of nearly everyone. We hope these precautions will be brought to the knowledge of all the schools and families in the country and that no one will suffer unwarned from the result of laudable curiosity.

MODERN MEDICAL LIBRARIES

We have drifted far from the days when the bibliothecarius, often a creature of pomp, pedantry *and quaint punctilio*, and always a man of high and curious learning, corresponded on equal terms with a Leibnitz or a Milton Such a man in the late seventeenth century was the famous scholar, Richard Bentley, who was King's librarian at St James's before the days of the British Museum He became Master of Trinity in the year 1700, but may be said to have inaugurated modern classical scholarship when still a librarian The roll of honour of librarians can be vastly extended, for it ranges down to the days of Richard Garnett, Bradshaw of Cambridge, and the present Pope, and numbers in its middle period such names as Lessing and Casanova Doubtless the ancient librarians often dozed aloof, or like erudite silkworms spun their own webs of learning, undisturbed by readers Now all that has been changed The modern librarian is above all things practical Indeed, in his laudable desire to be of use to an ever-growing host of students, as opposed to scholars, he is in danger of specialising in routine This becomes almost painfully manifest when we consider an exhaustive report on "Methods and Problems of Medical Education" recently issued by the Rockefeller Foundation of New York In this bulky pamphlet six medical libraries in different parts of the world, ranging from China to beyond Peru to Brazil and thence to Harvard and the Canadian Universities, have been fully reported upon by modern and able librarians. The general impression that will be left on the mind of any lover of a noble European tradition is that the library of to-day is a sternly efficient machine, an affair of typing, telephony, electricity, but hardly a home of abstruse research and reverent bibliography We hear little in this report of rare and precious works Indeed, in one fine American institution, all books prior to the nineteenth century are referred to by a modern lady librarian as "antiques," and the classification would appear to put John Hunter and his brother, also Sydenham, and many other permanent luminaries, in a fading glow One of the glories of the Rockefeller enterprise is the Library of the Peking Union Medical College Here there are 817 Chinese books, a surprisingly large number when we consider that at the beginning of the nineteenth century only one work on medicine produced in China destined to be of practical utility had come into public notice—there were of course others and more may be yet heard of them The one specially referred to is a translation by Sir George Staunton of Alexander Pearson's work on vaccination, published in Chinese type and illustrations at Canton in 1805 The title was translated for us by the late Sir Robert Douglas, the sinologist, and it ran thus "English recently issued Vaccination Rare-Book" Jenner's discovery appealed to the Chinese almost from the first, and their century long practice of vaccination is in strange contrast with their folk-medicine and the inclusion of tiger's eyes and other strange ingredients in their pharmacy How far the silken-robed figures of Chinese students gliding about the medical library of Peking are bent on modern scientific errands is perhaps matter of legitimate conjecture By all accounts they are serious students and to-day every opportunity is given them for research among some 4300 volumes of only three times or less for treatment. It comes as a surprise to find Dr. McCord saying that he has no hesitation in employing antisyphilitic remedies during pregnancy, for in London their use has been a routine measure for ten years at least, and no reason has been found why the drugs should not be administered if necessary up to the very day of delivery, provided that due attention is paid to the condition of the urine. It is also surprising to find that mercurial inunction has so large a place in his scheme of treatment, since it would be regarded with disfavour by most expectant mothers in this country. Its use may partly account for the poor attendance at the venereal clinic, but this may be inevitable in treating negroes, which is the more reason for using powerful drugs whenever there is an opportunity, especially as syphilitic infection in the negro is said to be more virulent than in white men. There is evidence from other sources, however, that mercurial inunction is in considerable favour in the United States, and of course the results can be excellent when it is given with skill and perseverance. Dr. McCord says that in his service 51 per cent. of stillbirths are due to syphilis—a proportion greatly exceeding that found in any hospital practice in Great Britain and suggesting strongly the need for intensive treatment, and therefore for intensive propaganda among the coloured population. The 300 cases form part of a series of 600 syphilitic pregnancies which he has now investigated, and amongst the 600 about 35 per cent. of the births were premature. Of 320 placentas examined 43·5 per cent. were noted as positive for syphilis.

THE LORD CHIEF JUSTICE ON BUREAUCRACY.

THE Minister of Health has occasionally been criticised for obtaining by means of Acts or Regulations the power of acting as judge to the exclusion of the jurisdiction of the law courts, and for other bureaucratic practices. The Lord Chief Justice has recently commented upon a further example of this tendency. Under Section 67 of the Rating and Valuation Act of 1925 the Minister is given a general power of removing difficulties in bringing this extremely complicated enactment into operation. For this purpose he may make orders of various kinds, and his orders may even modify the provisions of the Act itself "as may appear to the Minister necessary or expedient for carrying the order into effect." These words, remarked Lord Hewart, indicate the high-water mark of legislation of this sort. "Imagination fails to contemplate the extent of the power given to the Minister; he may cut the Gordian knot in any way he pleases." These observations were made during the case of Rex v. the Minister of Health, *ex parte* the Wortley Rural District Council on April 29th. The Court refused to quash one of the orders made by the Minister, but the Lord Chief Justice was not unconscious of the fact that "if the Court had decided to quash the order, the Minister could have attained his object on the following day by making an order under Section 67 'to remove the difficulty.'"

No doubt the Minister can take care of himself, but it is only fair to point out that there is nothing conspicuously novel in this statutory power to remove difficulties by departmental order when any new and intricate legislation is introduced. The power will be found in Section 78 of the National Insurance Act of 1911, in Section 45 of the Unemployment Insurance Act of 1920, and in Section 36 of the Contributory Pensions Act of 1925. It was inevitable that it should occur in a Rating Act which was likely to interfere with all sorts of conditions governing local assessment committees, local officials, and local differential rates—matters depending upon a great variety of local Acts. Moreover every such order under the Rating Act has to be laid forthwith before both Houses of Parliament, and for 28 days thereafter any vigilant Member can move that an address be presented to His Majesty for the annulment and avoidance of the order. Engrossed in his judicial duties, Lord Hewart can hardly be expected to keep an eye upon all Bills or orders laid before the House of Lords. Other critics might be reminded that the best opportunity of checking bureaucracy is to make an effective protest before—and not after—Parliament confers a bureaucratic power. Meanwhile, having had occasion in the past to complain when bureaucratic statutes or regulations seek to deprive the medical profession of its right of appeal to the law courts, we are glad to think that we can reckon upon the support of the Lord Chief Justice when that issue is next raised.

THE HEALTH OF THE ROYAL AIR FORCE.

THE report[1] on the health of the Air Force during 1925 has been recently issued, and is distinguished from those of the other services by the detailed attention it gives to hygienic conditions everywhere, and by the multiplicity of tables showing the age- and trade-incidence of disease amongst the personnel. The average strength in 1925 was 33,028, and the cases of injury and disease amounted to 68·1 and 379·1 per 1000 respectively. The corresponding figures for the previous year were 73 and 391, so that a satisfactory decrease has been recorded; and the same is true for the death-rate, 4·2 per 1000 (last year 4·5), and the invalid-rate, 9·3 per 1000 (last year 9·5). Amongst officers the rate of admission for disease is slightly lower than amongst other ranks, but it is much higher (92·0 per 1000) for injury. Dysentery was most frequent at Hinaidi in Iraq: two-thirds of the cases seem to have been diagnosed in the laboratory, and 10 out of 160 were amœbic. Of enteric fever there were 41 cases, leading to four deaths, and it has been decided that in Iraq inoculation shall in future be done every year, as the protection diminishes. Influenza was more prevalent than in the Army, and especially attacked the apprentices, whose age is 14 to 17. Two primary cases of malaria occurred in England, whilst abroad the number of cases fell to 99·3, the maximum being at Basra: 90 per cent. of the cases seem to have been diagnosed in the laboratory. Pneumonia (1·6 per 1000) was twice as prevalent abroad as at home. Sandfly fever, whose incidence in the forces abroad was 75·5 per 1000, was worst at Mosul but is generally decreasing. Tubercle of lung accounted for 14 cases at home and 13 abroad, the incidence of the disease in the whole force being 0·8 per 1000. The incidence of venereal disease is the lowest yet recorded, showing a further reduction from 22·3 per 1000 in 1923 to 19·9 in 1924. At home the incidence fell from 19·2 to 16·8, and abroad from 30·0 to 27·9. During the same period the primary incidence—viz., the number of new cases per 1000—fell from 16·3 to 15·1. In every 100 infections freshly acquired 83 are gonococcal, 8 syphilitic, and 9 due to soft chancre. The reduction is ascribed to preventive measures further developed this year; even greater success might have been hoped for them. Ulcers of the stomach and duodenum, becoming so frequent in Army and Navy, are not mentioned, but appendicitis caused 6·6 admissions per 1000 men. There were 93 cases of non-specific urethritis. Injuries from athletics formed 88 per cent. of the total injuries; 6·9 per cent. were flying accidents, in which 41 officers and 13 airmen were killed. The total number of casualties in flying accidents was 54 killed and 101 injured, as against 69 killed and 100 injured in 1923. Four deaths by wounds in action occurred in India, where two aeroplanes were shot down. The trade group which had most sickness was that of drivers, with most venereal disease and many injuries, but this group had the fewest admissions for influenza and infections of the upper air passages. All general duty officers were assessed for physical fitness at the end of the year, and 91 per cent. were found fit for full flying duties. In his letter prefatory to the report Air Vice-Marshal David Munro, Director of Medical Services, states that this is the highest figure so far recorded. The chief cause for rejection of recruits value to be fairly well appraised A recent article in *Surgery, Gynecology, and Obstetrics* (April 27th, Part I) summarises no less than 2475 cases and also goes fully into the physiology and the anatomy of the procedure It is obvious that although splanchnic analgesia is of great value in extensive operations within the upper abdomen its use should be limited to these that it should be selected with due consideration, and that its application must be conducted with the greatest care If these conditions are not fulfilled there are fatal pitfalls into which the anæsthetist may blunder, and these are well exemplified in cases quoted in the course of the article to which we refer The accumulated experience of various surgeons and anæsthetists has resulted in showing the advisability of a weak novocaine solution (many prefer ½ per cent to 1 per cent), the absolute necessity of making sure by aspiration before injection that a vein has not been entered, and for making allowances for the constant but temporary lowering of blood pressure which the injections produce It is interesting to notice that whereas in this country the injections are used in conjunction with a light general anæsthesia induced beforehand and maintained throughout, on the continent a general anæsthetic is not employed until called for by symptoms of pain on the part of the patient

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[1] London: H.M. Stationery Office. Pp. 71. 3s.

TRAFFIC IN WOMEN AND CHILDREN

WHEN the League of Nations was established an article was inserted in the Covenant under which the members of the League undertook (subject to past or future international conventions) to entrust the League with the general supervision over the execution of agreements with regard to the traffic in women and children In June, 1921, an International Conference at Geneva, attended by representatives of 34 countries, made various recommendations It suggested a new draft convention , it proposed to replace the words " White Slave Traffic " with the words " Traffic in Women and Children," so as to make its proceedings apply to all races alike ; it asked that Governments should be invited to make annual reports 'on' the conditions of such traffic , and it requested the League Council to set up an Advisory Council to deal with this subject These proposals were all duly carried into effect The Advisory Council has issued five reports , in 1923 it passed a resolution recommending that, pending the abolition of the system of State regulation, no foreign woman should be employed in the trade of prostitute, or should carry on such trade, in any licensed house , some countries where licensed houses exist are said to have acted upon this recommendation In the same year the Advisory Committee proposed issuing a questionaire to Governments on the topic of the licensed house system and its effect on the traffic , this proposal also was carried out, and resulted in obtaining much useful information Finally the Committee recommended that the Council should appoint a body of experts to investigate conditions This, too, was done with the aid of a generous offer from the American Bureau of Social Hygiene, and Part I of the experts' report is now available It contains material gathered in 28 different countries after interviewing some 6500 persons who were believed able to afford information ; about 5000 of these were connected with commercialised prostitution, and a large number consisted either of prostitutes or *souteneurs* Certain routes of traffic between Western Europe and Central and Southern America were investigated ; inquiries begun in Southern America were extended to Central and Northern America, to countries bordering on the Mediterranean and to certain countries on the Baltic and North Seas The report is a frank document, likely to fulfil its purpose of stirring up public opinion and of strengthening international machinery by effective cooperation

As in other instances where Great Britain has agreed to incorporate international standards in its legislation, it is possible to claim that our national standard is in advance of the international An Englishman's home is his castle, but in English town life the opinion of the neighbours has always been strong enough to stimulate the law to suppress nuisances It was at all material times a common law offence in this country to keep a brothel, because (in Sir Edward Coke's phrase) such conduct draws together the debauched and dissolute and corrupts public morals by the open profession of lewdness In 1650, during the austere times of the Commonwealth, an Act was passed " for suppression of the deadly sins of incest adultery, and fornication," under which the keeper of a common brothel or bawdy house was to be punished at the first offence with public whipping and branding on the forehead with a hot iron, and at the second offence with death. There was never in modern England any official acceptance of the principle of licensing or toleration of brothels by the State The legislation which began with the Contagious Diseases Prevention Act of 1864, "for the better prevention of contagious diseases at certain naval and military stations," afterwards replaced by the Acts of 1866 to 1869, was repealed after a now forgotten controversy in 1886 Public inquiry into allegations of traffic in girls from England to continental brothels led to the passing of the Criminal Law Amendment Act of 1885 which dealt severely with procuration This Act and its successors have killed the traffic from England to the continent, and legislation such as the Children (Employment Abroad) Act of 1913 and the Theatrical Employers Registration Act of 1925 (which penalises employers who abandon their performers and leave them stranded without pay), as well as enactments respecting health and unemployment insurance and pensions, must play some part in preventing women being driven into the ranks of prostitution by mere economic pressure upon themselves and their dependent relatives It is not easy to see how any further legislation can add safeguards in this country, though possibly additional precautions can be taken administratively by vigilance in the matter of passports and by such measures as are being taken to grapple with the international traffic in dangerous drugs The work of the League of Nations will, of course, receive support in civilised communities, though not a little had been achieved before the League came into existence Under the International Agreement at Paris in 1904 the high contracting parties pledged themselves to certain administrative measures, and under the Paris International Convention of 1910 the signatory nations undertook to penalise and prosecute vigorously the procuration of women and girls The Convention of 1921 contains an article binding Governments to adopt such administrative and legislative arrangements in connexion with immigration and emigration as will check traffic in women and children, and in particular to make regulations for the protection of passengers on emigrant ships at the points of departure and arrival and during the journey The recent report of the League of Nations experts mentions some of the legislative provisions made for this purpose , it also indicates the association between commercialised prostitution and the illicit sale of alcohol, traffic in obscene pictures and books, and the practice of sexual perversion Success in suppressing these latter evils depends, of course, upon the firmness and integrity with which a country's laws are administered

SYPHILIS IN PREGNANCY

Dr J R McCord, of Atlanta, has recently published a short account [1] of 300 consecutive pregnancies in negro women whose Wassermann reaction was " four-plus " Counting abortions, stillbirths, and neonatal deaths, some 34 per cent of the pregnancies ended in disaster The figures make it clear once more that antisyphilitic measures during pregnancy are desirable, for among the 99 women who had prenatal treatment the percentage of accidents was halved—and this in spite of the fact that 43 of them attended tration of alkalies does diminish very considerably the incidence of albuminuria and nephritis, and their views should interest those whose province is the treatment of infectious diseases

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[1] Amer Jour of Obs and Gyn., March, 1927.

SIR GEORGE HUMPHRY, ANATOMIST AND TEACHER

THE last issue of the Annals of Medical History contains a vivid sketch, by Sir Humphry Rolleston, of Sir George Murray Humphry, professor of anatomy in the University of Cambridge from 1866 to 1883, and thereafter professor of surgery for 13 further years Humphry has been dead for 30 years, and that is a long time in a busy world for the personal memory of any man to survive, while Humphry's particular section in that world has undergone a revolutionary transformation during the period But his sound work has passed into scientific history, while his personality was so striking that there must be many readers of THE LANCET for whom Sir Humphry Rolleston's words will recall that frail, gaunt man, who with flashing eye and pentrating voice, revealed to them by illustrations, examples, and references—numberless but without a superabundant word—the mysteries of structure, whether in anatomy or its surgical application "Eyes first, fingers next, ears last!" was, however, Humphry's own warning against acting upon verbal instruction to the neglect of first-hand investigation, and his teaching in the wards ever insisted upon due proportion in observation Humphry's pupils were devoted to him, and as, under the influence mainly of himself and Sir George Paget, the Medical School at Cambridge grew large, an increasing number of men went out into professional life whose attitude towards their work was influenced at its outset—probably far more than they were themselves aware—by Humphry's rigid accuracy, his contempt for the superfluous, and his exhaustive industry where essentials were concerned These men will be grateful to Sir Humphry Rolleston for his note on their master

EPIDEMIC JAUNDICE

EPIDEMICS of jaundice have been described since 1745, when Gleghorn recorded its prevalence in Minorca, but until more than a century later Weil published an account of four cases with a definite symptom-complex no clear distinction between catarrhal and epidemic jaundice seems to have been made Weil's patients suffered from pyrexia, jaundice, enlargement of liver and spleen, hæmorrhages, and febrile relapses Not until 1914 was any light thrown upon the ætiology of the condition though earlier observers had reason to suspect pollution of water as a factor In November, 1914, however, two Japanese workers, Inada and Ido, isolated a highly motile spirochæte, some 7 to 14 μ long, from a patient suffering from the Japanese form of Weil's disease, which has since been known as spirochætosis ictero-hæmorrhagica Noguchi in 1917 pointed out that the organism was characterised by exceedingly fine spirals throughout its length and suggested for it the generic name of leptospira It was recognised among German, French, and British soldiers on the Western front, the diagnosis being confirmed by inoculation of the patient's blood into guinea-pigs and the demonstration in the animal tissues of the spirochæte Since the end of the war epidemics and sporadic cases have been reported from many countries One of these epidemics—that occurring in East Lothian in 1923 among coal-miners—has been studied in detail by Dr George Buchanan under a grant from the Medical Research Council his findings, published to-day,[1] are illustrated by beautiful plates and by microphotographs which vary in their quality He discusses the clinical history, pathology, and morbid anatomy of the condition, as exemplified by 22 cases diagnosed on clinical symptoms and the presence of the spirochæte in the urine and confirmed in two instances by transmission of the disease to animals by inoculation of the urine Experimental investigations take up nearly a third of the book, the concluding sections being devoted to the spread of the disease, bacteriological diagnosis, immunity and serology, and prophylaxis The patients were under the care of Prof G Lovell Gulland, who diagnosed the condition, the chief clinical features being sudden onset with headache, body pains gastro-intestinal symptoms, high fever, slight epistaxis, the appearance of jaundice about the fifth day, a fall of temperature at the end of 11 or 12 days, and the finding of the specific spirochæte in the urine Of the 22 cases 5 were fatal As to the spread of infection, wild rats and field-mice were incriminated as carriers of the causal organism On the experimental side a new observation was that of the presence of a relative small-lymphocytosis in experimental animals within the first few days after infection, and the author suggests that this phenomenon might be of value in diagnosis of human cases Dr Buchanan believes that the portal of entry in human cases is more likely to be the abraded skin, or the mucous membrane of the nose, or the eye, from contaminated hands, than the intestinal tract Inquiry into other possible sources of infection revealed leptospiral organisms in fungal slime hanging from the roof of certain coal-mines and in pit and surface water As to diagnosis, blood examination for the spirochæte proved negative in all cases, as did guinea-pig inoculations with suspected blood, but only three cases were examined by these methods within seven days of the onset of the illness Urinary examinations and inoculations were more helpful, but even these were uncertain and appearances under dark-ground illumination atypical, nor did serological methods yield definite results The author holds, however that in cases of jaundice where clinical signs point to the spirochætal form, where granular spirochætes are found in the urine, the diagnosis of spirochætal jaundice is justified A specific antiserum was prepared but too few cases were available to provide evidence as to its efficiency The chief prophylactic measures recommended are improvement of drainage of infected coal-mines and rat extermination since over a third of the rats examined from the Edinburgh district harbour the organism Seeing that the bibliography refers to some 200 papers on the subject of this disease, the preparation of this book can have been no light task Dr Buchanan has provided, as well as notes of his own patient investigations, a useful index to the literature

THE Rockefeller Medical Fellowships for the academic year 1927–28 will shortly be awarded by the Medical Research Council, and applications should be lodged with the Council not later than June 1st These Fellowships are provided from a fund with which the Medical Research Council have been entrusted by the Rockefeller Foundation Fellowships are awarded by the Council, in accordance with the desire of the Foundation, to graduates who have had some training in research work in the primary sciences of medicine or in clinical medicine or surgery, and are likely to profit by a period of work at a university or other chosen centre in the United States before taking up positions for higher teaching or research in the British Isles A Fellowship will have the value of not less than £350 a year for a single Fellow, with extra allowance for a married Fellow, payable monthly in advance Travelling expenses and some other allowances will be made in addition Full particulars and forms of application are obtainable from the Secretary of the Medical Research Council at 15, York-buildings, Adelphi, London, W C 2

NAVAL MEDICAL COMPASSIONATE FUND —At the quarterly meeting of the directors of this Fund, held on April 21st, Surgeon Vice-Admiral Sir Joseph Chambers, Medical Director-General of the Navy, in the chair, the sum of £210 was distributed among the several applicants was “ loss or decay of many teeth,” and for rejection of apprentices, defective vision. Aural disease comes fourth in this list. Twelve officers and 50 airmen passed the short course in hygiene, and five medical airmen passed the long course. Hygiene and sanitation will be included in the new promotion examination for officers. Details are given of improvements being made in barracks, in drainage, and in water-supply. It is noted that since boots of naval pattern have been on issue no case of hallux rigidus has arisen among the apprentices. These boys are measured and weighed twice yearly, and the rate of growth is satisfactory. During the year 1925, 176 casualties were transferred by air in Iraq, compared with 81 in 1924; this form of transport is now used as a routine. The report contains information about the R.A.F. Central Pathological Laboratory at Halton, and the other six hospital laboratories, and there are returns of the dental work done.

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[1] Medical Research Council Special Report Series No 113 1927 H M Stationery Office Pp 64 4s

WOLF BOYS.

THAT the latest story of a wolf boy should come from Allahabad is neither surprising nor historically irrelevant, for this great Indian city is in the United Provinces of Agra and Oudh, and no other part of the world has been so prolific in the production of these creatures; indeed, in recent times they have appeared nowhere else. To Major-General Sir W. H. Sleeman, K.C.B., resident at the Court of Lucknow, must be accorded the credit of their introduction to the notice of Europe, for it was in 1858 when he published in London his “ Journey through the Kingdom of Oude ” that England first came to know of their existence. In Vol. I. of this work there is contained a number of stories of wolf boys written in a live and natural manner, and reproducing the style and tone of thought of the Hindustanee narrators. General Sleeman proved himself a good listener, and when the penchant of the gallant soldier became known many there were who assisted him not only wisely but too well in his researches, for all observers maintain that your Indian is ever an adaptable and an imaginative being. In a letter to the *Lucknow Witness* of June 19th, 1874, this explanation of the high local incidence of wolf boys in Oudh is confirmed. The writer of the letter, who was employed in the Oudh Frontier Police and served under General (then Colonel) Sleeman, signs himself as “ O. P. A. ” In his letter he states that “ when the Oudh Durbar officials discovered what they considered to be a ‘ shauk ’ (desire) of the resident, they hastened to produce several unfortunate idiots, positively declaring them to be ‘ wolf boys.’ ” There is no doubt, says this writer, that the natives believe in the existence of these wolf-nourished creatures, but, he asks, “ is it not probably a true solution of the mystery which, for so many years previous to the annexation of Oudh, has enveloped the history of these unfortunate creatures, to suppose that they were simply idiots who, straying away from the place of their birth, wandered, driven by hunger from place to place in search of food; their parents or friends, themselves perhaps poverty-stricken, not being over-anxious to search for and bring back to their homes such burdens on their scanty means? ”

As long ago, too, as August 14th, 1873, there appeared in the *Edinburgh Courant* the following intimation: “ A novelty, in the shape of a ‘ wolf boy,’ has just arrived at Lucknow, and has been handed over to Dr. Whishaw to undergo a process of taming in the lunatic asylum. ” On reading this Dr. Ireland, the medical superintendent of Larbert and noted at the time for his wide and skilled knowledge of mental deficiency, wrote to Dr. Whishaw “ begging him to give some information about the truth of this case which, for the first time, seemed to have come under the observation of one of our own profession. ” Dr. Whishaw’s reply was disconcerting. “ The boy is fourteen,” he wrote, “ and an impostor; he was made up to get money under false pretences. I found him out. I believe never in this world has there been an instance of a child being brought up by wolves, and I cannot understand how anybody can believe in such a thing. It is a common fable in all Indo-European languages. The majority of wolf boys are idiots, taken by their parents and left near some distant police station. ” At about the same time Dr. Ireland was preparing his “Inquiry into Some Accounts of Children being Fostered by Wild Beasts,” which appeared in print in July, 1874. In a subsequent publication dated October of the same year, he quotes the letter by “ O. P. A. ” in full, but it is obvious that he received a copy of it only after he had concluded his original “ Inquiry,” and that he publishes the letter in confirmation of his own conclusion that “ the same explanation seems to do for them all, that idiots have occasionally been found straying in the woods, and that people accounted for their wildness and stupidity, their want of speech, and their abnormal sense of taste, by supposing that they had been brought up by or lived in the company of wild beasts. ” To complete the story, on Nov. 7th, 1874, there appeared in the *Academy*, a paper on the same subject, by Prof. Max Muller, but no mention is made therein of these researches. “ The cases put together by Prof. Max Muller,” writes Dr. Ireland, “ are the same as those already mentioned in my article, which had not the good fortune to attract his notice ”; apparently the examination and conclusion of the medical superintendent of Larbert were distasteful to the speculative aspirations of the learned philologist. Nevertheless, the wolf boy of Allahabad appears to afford additional evidence in favour of Dr. Ireland’s contention, for the facts, as published in the *Times* on April 26th last, show that he has many of the characteristics of an epileptic idiot. “ He has,” says the report, “ a prodigious appetite. He is subject to fits. At times he is ferocious. He has also bitten himself. He is said to betray certain instincts even lower than those of his alleged foster parents. He has a scar on the left side of the face and this has had the effect of dragging the eye down to an unnatural expression. ” Nor need this facial scar have been caused by a wolf, as idiot and epileptic children, especially of rustic, ignorant, and careless parents, are liable to many serious injuries, and some of these do result in hideous scars.

THE PREVENTION OF SCARLATINAL NEPHRITIS.

ALTHOUGH scarlet fever is nowadays a comparatively mild disease, with a mortality of less than 1 per cent., its sequelæ cannot be regarded as negligible. The communication by Dr. A. Osman and Dr. H. Carter, reported on p. 971, has focused attention on the incidence of nephritis as a complication of scarlet fever. Since scarlatinal nephritis is not commonly seen, there is a tendency to regard it as practically non-existent, and to take no steps towards its prevention. However, if all cases of scarlet fever at the various fever hospitals were examined, it would be found that albuminuria is present in from 3 to 5 per cent. and nephritis in from 1 to 2 per cent. Osman and Carter noted an incidence of 5.5 per cent. of albuminuria in 336 cases, while in another series of 316 cases nephritis was present in 2.9 per cent. The presence of albuminuria is in itself significant. It implies damage to the renal tissue, and is a warning to the clinician that the more severe complication of nephritis may ensue if measures are not taken to assist the threatened kidneys. Nephritis with red blood cells and casts in the urine is a serious complication, not only from the immediate danger of uræmia, but also from the subacute or chronic inflammatory processes which may persist in the kidneys. The fact that scarlet fever is a mild disease has no bearing on the severity of the nephritis which may arise as a complication; even a general average of 1 per cent. of nephritis and 5 per cent. of albuminuria is not inconsiderable when the total incidence of scarlet fever on the population is considered. The figures of Osman and Carter indicate that the administermination of the radical breast operation to take precautions against possible or probable parasternal invasion of the thorax by burying radium tubes for 24 hours along the line of the internal mammary glands, placing a tube also in contact with the lowest of the supraclavicular glands at the lower and inner angle of the posterior triangle. In my private cases this policy has justified itself by a diminution of 10 per cent in the recurrence rate. I believe that no operation for breast cancer can in future be regarded as adequate which does not take steps to deal with the danger of parasternal invasion.

Lead Treatment is recommended by Blair Bell as a routine supplement to operation, but some years must elapse before a judgment of its value can be formed. The method has some striking successes to its credit, but it is necessarily attended by a certain risk.

Post-operative Treatment.—A post-operative course of X rays, sufficient merely to stimulate the normal tissues while depressing the vitality of any surviving cancer cells, seems to be a reasonable precaution, but on no account should large doses of high voltage X rays be employed. The "old-fashioned" type of X ray treatment appears to give the best results.

Treatment of Recurrences

With the advent of radium, and increased knowledge how to use it, the prospect in many cases of recurrence, formerly untreatable, has become a hopeful one. This applies especially to recurrence in the supraclavicular triangle, which if detected early can now be treated by excision of glands combined with the use of radium, or by buried radium alone. Such cases may have no further recurrence for ten years or longer.

The same thing is true of recurrence in the sternum, a very painful and common, and formerly quite untreatable, mode of recurrence. Buried radium tubes used on the encirclement principle will frequently suppress the sternal trouble.[1] Of course, in such cases the disease has often spread to the intrathoracic glands, and after a period of activity and freedom from pain, lasting perhaps several years, thoracic metastases terminate existence in a quick and merciful way. Much longer periods of freedom and health may, however, be secured. I have at present under my care in hospital a patient who had a sternal recurrence six years ago. This was suppressed by buried radium. The patient would have passed from observation had it not been for the recent development of secondary carcinoma of the cervical vertebræ. The sternal disease has not recurred.

If treated early on these lines sternal recurrences can mostly be held in check for a considerable period, and exceptionally a permanent cure of the disease after the failure of a radical operation may be attainable. Anyhow, relief of pain and the prevention or cure of external ulceration can generally be counted upon.

For cases of widespread dissemination, where operation and radium are both useless, X rays may be tried, but lead treatment appears to provide a more hopeful alternative.

Prognosis in Breast Cancer.

Breast cancer may be fatal in three months or only after 40 years. In the most acute forms, with "inflammatory" manifestations, prognosis is easy. In the more chronic forms it is impossible until near the end. The disease may creep about in the tortuous recesses of the parietal lymphatic plexus for years without even giving rise to a subcutaneous nodule. Ultimately, at some point or other, permeation penetrates the defences of the body cavity, attacks the bones, or reaches the cranial cavity. When once evidence of visceral disease has declared itself it is rare for life to be prolonged for more than a year, and a definite forecast of the future can be given.

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Special Articles.

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The public has not generally realised that, though there have been considerable increases in hospital accommodation for general medical and surgical diseases, there has been little real increase for many years in the facilities for the care and treatment of women during the critical times of pregnancy, labour, and the lying-in. As a result there has been a lack of cases required for the teaching and practical training of medical students in midwifery, a deficiency which does not exist to anything like the same extent in other parts of the medical curriculum. It would not be difficult to show that this long-standing lack of hospital facilities for the teaching of obstetrics is largely responsible for the present high and undiminishing rate of maternal mortality and morbidity in this country.

The reasons for this lack of hospital accommodation are:—

1. The maternity charities have not pressed large appeals for funds, and have therefore figured less in the public eye than other special and general hospitals.
2. The public, through lack of education on these matters, do not regard the processes of child-bearing as potentially dangerous or as requiring medical attention, except in cases of emergency.
3. The science of obstetrics has been erroneously regarded as a minor branch of medicine whereas it is in fact of equal, if not greater, importance than medicine and surgery, because every doctor must be ready for the emergencies of midwifery, and must be capable of dealing with them single-handed. Hospital facilities for teaching obstetrics have not been considered indispensable, and expansion in this department has not kept pace with that of other departments.

The results of the neglect by the public and the profession of obstetrical practice are :—

1. Inability to provide sufficient in-patient accommodation for the large number of women who require expert assistance in labour, especially those pregnant for the first time.
2. Totally inadequate provision for the diseases of pregnancy. The available beds are all required for women in labour and the lying-in, making it very difficult to admit those needing treatment, rest, and nursing during pregnancy.

The antenatal care of pregnant women has been demonstrated to be one of the most valuable of all forms of preventive medicine. It must be considered as the most important modern development of obstetrics, and one of its chief activities. Failure to provide facilities for antenatal treatment is one of the most conspicuous pieces of evidence that maternity hospitals are not keeping pace with the movement, and experience emphasises more and more strongly the vital need of preventive methods.

3. Almost no provision of beds for puerperal fever. This is still the chief single cause of death in childbirth, and in 1925 accounted for 1110 fatal cases. It has scarcely diminished during the last 50 years. The maternity hospitals and the general hospitals cannot admit cases of puerperal sepsis, a disease which demands above all things efficient treatment and good hospital nursing.

Apart from the Poor-law infirmaries and some M.A.B. hospitals, it is almost impossible to obtain hospital accommodation for a patient suffering from puerperal sepsis anywhere in London. While all other forms of

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CCXXII

THE TREATMENT OF BREAST CANCER

IN spite of the prevailing medical and lay pessimism about the results of operation for cancer, a pessimism which is founded upon out-of-date experience, the outlook in breast cancer is a very hopeful one, always provided that the disease is detected early and dealt with promptly The treatment of breast cancer is a difficult enterprise, not to be entered upon lightly, nor without due study of the pathology of the disease The primary growth is near the surface and is apparently much easier to deal with than, for instance, a cancer of the cervix uteri But whereas the uterus has a simple and well-defined lymphatic drainage, the breast has multiple and complicated connexions with the lymphatic system which make the surgeon's problem difficult The first local spread of the carcinoma through the breast is facilitated by the particularly rich network of intramammary lymphatics It takes place, not by the slow process of infiltration but by the more rapid method of permeation—the growth of plugs of cancer cells along the lymphatic vessels of the breast Some authors, with little pathological knowledge, still speak of permeation as a hypothesis It is necessary to state that its occurrence and frequency have been established beyond doubt or question by repeated observation In correspondence with the high development of the intramammary lymphatic system the breast possesses numerous and free communications with the rest of the lymphatic system As a result the disease is able to pass early and easily to parts beyond the breast Many of the mammary lymphatics run straight back into that part of the fascial lymphatic plexus which lies upon the great pectoral muscle This is the largest single lymphatic plexus in the body, and gives the disease access ultimately to the whole of the parietal tissues, if time be allowed for permeation to spread. Hence the wide dissemination of skin nodules seen in some late cases of breast cancer

Another route of dissemination, and one which has attracted undue attention because it is patent to clinical observation, is the embolic invasion of the axillary glands of the same side leading to their early enlargement It has been shown that if once the axillary glands are attacked the prognosis for the future must be cautious, even after an efficient operation If the axillary glands are still free from disease the chances appear to be four to one that an operation will rid the patient of her disease If the axillary glands have been invaded, the chances of prolonged freedom from recurrence are about one in four This is a most significant fact

It is, however, very rare for recurrence after operation to occur in the axilla itself, even if the axillary glands are in an advanced stage of disease, if the axilla has been properly cleared by a practised surgeon Clearly, therefore, invasion of the axillary glands is not in itself the explanation of the blight which falls upon the patient's prospects when axillary infection occurs Some other serious event has occurred, an event of which axillary gland invasion is the mere accompaniment and index

Parasternal Invasion of the Thorax

This event is an invasion, simultaneous with the axillary gland invasion, of the glands on the mesial side of the breast, those, namely, of the internal mammary chain lying behind the costal cartilages just outside the border of the sternum These glands lie beyond the range of operation and their condition cannot be determined by any clinical method Unsuspected early invasion of these glands, only manifesting itself after a period which is usually about three years, but which may be as long as 14, is now the most frequent cause of failure after a well planned operation for breast cancer The method of meeting this danger will be discussed later The evidence upon which this conclusion is based is a study of the recurrences after a scientifically planned operation Local and axillary recurrences are reduced almost to zero, and more than half the recurrences *are found either as nodules at the inner ends of the* upper intercostal spaces, or show themselves in the supraclavicular triangle, the glands of which are connected with the internal mammary chain

Epigastric Invasion of the Abdomen

The lower and inner margin of the breast reaches to within an inch of the ensiform cartilage, a region in which the body cavity is ill-defended against the insidious attack of permeation At the tip of the ensiform the only layer which intervenes between the permeated fascial lymphatic plexus and the subserous fat is the linea alba, and this layer is penetrated by lymphatic vessels Fortunately, by removing the dangerous portion of the anterior layer of the rectus sheath it is possible to guard against invasion by this route and in recent years abdominal recurrence has become relatively rare

Method of Operation

Two stages are traceable in the evolution of the operation for breast cancer (*a*) the empirical stage in which the surgeon was guided by a clinical study of previous results, (*b*) the rational stage in which he is guided by knowledge of the mode of spread of the disease The final and best product of the first stage was the operation of Halstead The work of Stiles, and subsequent English work on dissemination, has shown radical defects in the original Halstead method, and it may be said that the modern operation for breast cancer is largely a British product Its aim is to remove intact in a sheath of healthy tissue the primary growth, along with the surrounding permeated area of the lymphatic system and the embolically invaded glands For such an operation the name amputation of the breast is a misnomer The operation must be accurately centred on the primary growth and will therefore differ in each case with the situation of the primary growth in the breast Operative details are here out of place, but it must always be remembered that the disease spreads centrifugally and roughly in a circle from its point of origin, and that the primary plane of spread is the fascial lymphatic plexus, not the skin Removal of a maximal area, 10 in or 12 in in diameter, of the deep fascia is perhaps the most important and difficult part of the operation Failure in this respect and unnecessary ablation of skin appear to be the defects of the original Halstead method

Many technical variations are possible in the operation Some operators prefer to dissect the axilla before removing the breast, believing that thus bleeding is minimised Personally I prefer first to define and dissect up, along with the breast, the large circle of deep fascia in which the growing edge of the disease lies After the axillary dissection this circle cannot be defined with such precision

Diathermy in Breast Surgery

I have been much impressed of late with the advantages of the diathermic knife over the scalpel in breast surgery The whole operation except at the apex of the axilla can be performed as rapidly, and with less bleeding and shock, by diathermy The risk of implantation is done away with The peripheral edge of deep fascia does not need actual removal provided only that the diathermy knife passes along its plane so as to destroy the permeated lymphatics This is an important simplification of the operation The wound may be closed after diathermy just as after a cutting operation and healing is usually satisfactory and painless

Routine Prophylactic Use of Radium at the Operation —For the last six years I have made it a rule at the termination of the radical breast operation to take precautions against possible or probable parasternal invasion of the thorax by burying radium tubes for 24 hours along the line of the internal mammary glands, placing a tube also in contact with the lowest of the supraclavicular glands at the lower and inner angle of the posterior triangle. In my private cases this policy has justified itself by a diminution of 10 per cent. in the recurrence rate. I believe that no operation for breast cancer can in future be regarded as adequate which does not take steps to deal with the danger of parasternal invasion.

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Apart from the Poor-law infirmaries and some M.A.B. hospitals, it is almost impossible to obtain hospital accommodation for a patient suffering from puerperal sepsis anywhere in London. While all other forms of acute fever, such as the epidemic fevers, can be admitted to special fever hospitals under the care of experts in these diseases, it is remarkable and discreditable *that no existing hospital is available for the* treatment of this, which is one of the most fatal forms of fever Of this disease there were 2396 cases notified in 1925 Perhaps in no other disease is inexpert treatment likely to be fraught with so much disaster

4 *Inadequate facilities for teaching obstetrics to medical students*

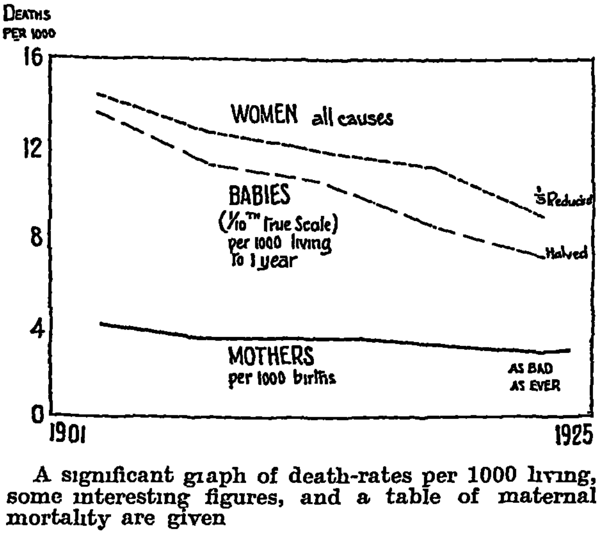
It is not realised by the public how inadequate is the preparation of the student for the practice of midwifery Out of two years clinical training for qualification only five months are allowed for learning the whole of clinical obstetrics and gynæcology—a branch of medicine above all others which he will be called upon to practise single-handed, ready for all its urgent possibilities

5 The continued high rate of maternal mortality and the larger amount of ill-health which may result from childbirth in this country

As an economic factor the latter, largely hidden from the notice of the public, is of great national importance This legacy of ill-health, disability, and *therefore inefficiency of the mother, seriously affects* her capacity for the duties of a housewife and for training a young family of children. The results of this are self-evident More than one-third of all out-patients in a gynæcological hospital are suffering from the results of obstetrical injuries and infections

The committee of management and medical staff of Queen Charlotte's Hospital are impressed by these facts and have decided that there must be considerable expansion in the hospital accommodation, teaching, and research

An important feature of the new building will be the provision of about 25 beds, contained in an isolation flat, for the reception, treatment, and investigation of puerperal sepsis There will also be some beds set aside for the treatment of antenatal conditions



A significant graph of death-rates per 1000 living, some interesting figures, and a table of maternal mortality are given

Table of Maternal Mortality

Year	Death of one mother to—	No of deaths per 1000 births	Year	Death of one mother to—	No of deaths per 1000 births
1897–1906	228 births	4 39	1915	254 births	3 94
1907	261 „	3 83	1916	259 „	3 87
1908	280 „	3 57	1917	273 „	3 66
1909	271 „	3 70	1918	282 „	3 55
1910	281 „	3 56	1919	243 „	4 12
1911	272 „	3 67	1920	243 „	4 12
1912	265 „	3 78	1921	270 „	3 70
1913	270 „	3 71	1922	263 „	3 80
1914	253 „	3 95			

To show the Inadequacy of the Present Accommodation

About 4000 women, in- and out-patients, are delivered by Queen Charlotte's Hospital in a year

In 1926 the hospital was *closed 15 times* to further admissions because it was full

In 1926 the hospital was *closed on 46 days* to further admissions because all beds were occupied

Queen Charlotte's Hospital is accordingly appealing for £250,000 to provide buildings which will double the capacity of the hospital, and afford endowment which will enable it to do the work demanded of it unhampered by lack of funds, which cramps the full scientific utility of this institution.

Not only will the hospital itself gain, but it is believed that the wide advertisement and publicity incidental to an appeal and the rebuilding of the oldest and best known lying-in hospital in London, will be forcible evidence of a forward policy in the world of obstetrics, and that it will have its repercussion on the maternity policy of the whole country.

(Signed) J BRIGHT BANISTER M D , F R C S
ALECK W BOURNE, B C , F R C S.
TREVOR B DAVIES, M D , M R C P , F R C S
T. WATTS EDEN, M D , F R C.P , F R C.S.
W GILLIATT, M D , M S , F R C S
C S LANE-ROBERTS, M S , M B , F R C S.
LEONARD PHILLIPS, M S , M B , B Sc.Lond , F R C S
LOUIS CARNAC RIVETT, M C , F R C S
THOM. G STEVENS, M D , F R C S
CLIFFORD WHITE, M D , B S , F R C P., F R C S
LESLIE H. WILLIAMS, M D , M S , F R C.S.

The President of the hospital is Lord Howard de Walden, the Chairman Major Sir Samuel Scott, Bt , the Hon Treasurer Mr Anthony de Rothschild Donations should be sent to the Hon Treasurer at the offices of the Queen Charlotte's Building Fund, 5, Cosway-street, Marylebone-road, N W 1.

DROITWICH SPA

EXTENSION OF THE BRINE BATHS

ON April 29th Mr Neville Chamberlain, M P, in the presence of a large company of medical men and others interested in spa treatment, opened an extension to the St Andrew's brine baths at Droitwich The extension consists of a block of 17 first-class reclining bathrooms with dressing-rooms adjoining, some additional second-class reclining bathrooms, and further accommodation for aeration baths The new building is so arranged that invalids can be *wheeled directly into the corridors* of the bathrooms, while those who come on foot have no steps to climb

The ceremony was preceded by an agreeable luncheon in the grounds of the Worcestershire Brine Baths Hotel at which the Mayor of Droitwich was supported by the three trustees of the Corbett Estate, who control the bathing establishment—Viscount Cobham, Mr J W Willis Bund, C B E , and Mr Chamberlain himself There were also present Sir William Willcox, Dr Matthew Ray, Dr Fortescue Fox, Dr Percy Roden, ex-mayor, Dr F H Foulds, Dr Malcolm Campbell, Dr John Wilkinson, Dr F I Dawson, Dr C F Curtis, Dr T Stephenson, editor of the *Prescriber*, a number of practitioners from neighbouring towns, and a representative of THE LANCET

Prayers were said by the Rev E H Longland, Mr. Chamberlain declared the building open, and the company adjourned to a reception in the Salters' Hall, where Mr Chamberlain gave an address, not—he was careful to explain—as Minister of Health, but as junior Corbett Trustee The brine baths of Droitwich were, he said, *a great national possession*, known to the Romans, mentioned in Domesday Book, the spring of brine, 200 ft below the surface of the ground, was inexhaustible in quantity, and the strongest in the world Droitwich was protected from winds by the surrounding hills and the climate was bracing and not too cold At St Andrew's baths which were built on modern lines, full use was made of the properties of the brine—stimulating, anodyne, and so buoyant as to give complete and even support to the limbs, whose mobility could thus be restored It was well worth while, said he, to get an attack of rheumatism or lumbago in order to experience the comfort of a bathe in these waters

The amount of invalidity produced by rheumatism was, Mr Chamberlain continued, causing concern to the approved societies Droitwich already catered to some extent for the less well-to-do classes There were 40 beds at St John's Hospital with 450 patients a year, half of them insured persons, supported by friendly societies. In the convalescent home at Highfield 75 beds were provided by working people, through the Birmingham Hospital Saturday Fund without assistance from outside source The local guardians also arranged to take rheumatic patients from other Poor-law unions Under the will of the late Mr Thomas Corbett the whole of the estate would ultimately go in charity The present extension increased the first-class accommodation, but there was, if he might make a suggestion, one thing lacking There was hardly any medical literature about Droitwich methods of treatment The better the article the more it paid to advertise it and an unkind world might not believe that anything at all was being done

Dr Roden told the story of the first use of the brine as a therapeutic measure during the cholera epidemic of a century ago, and the gradual elaboration in the use of the baths, which were now nearly perfect

Sir William Willcox said there was no water in the world with the same properties The brine was 40 per cent more dense than the water of the Dead Sea and was highly radio-active The rheumatic diseases accounted for one-sixth of the whole invalidity of workers and he would like to see the accommodation at Droitwich extended ten-fold The best advertisement for the place was, he thought, the persuasive influence of the cured patient

Dr Ray also returned thanks on behalf of the medical guests

AUSTRALASIAN MEDICAL CONGRESS

(From our own Correspondent)

The Second Session of the Australasian Medical Congress was held at Dunedin, New Zealand, from Feb 3rd to 10th Dr L E Barnett (Dunedin) presided, and the other principal officers were Dr W P Gowland (hon general secretary), Dr A M. Drennan (hon associate secretary), and Dr D W Carmalt-Jones (hon treasurer) There were 425 members present, including 175 Australians and 30 medical women Dr Cooper Pattin was the guest of the Congress, representing the British Medical Association

The first suggestion of a congress of medical men throughout Australia and New Zealand was made in 1886 by Dr Poulton of Adelaide, and an Intercolonial Medical Congress was held in Adelaide in the following year, to commemorate the Jubilee of Queen Victoria The first to be held in New Zealand was at Dunedin in 1896, and the Congress met again in New Zealand in 1914, at Auckland The last of the Intercolonial Congresses was held in Brisbane in 1920, when it was decided to establish the present series under the auspices of the B M.A The first Australasian Medical Congress (B M A) was held in Melbourne in 1923 with Mr (now Sir George) Syme in the chair Great encouragement was then given to New Zealanders to attend, and hopes were expressed that New Zealand would not break away from the Australian States After this the invitation to Dunedin in 1927 was readily accepted.

Inaugural and Scientific Meetings

The inaugural meeting was held on Feb 3rd, and was opened by the Hon W Downie Stewart (Acting Prime Minister), in the unavoidable absence of both the Governor-General and of the Premier, Mr Coates The Hon J. A Young (Minister of Health) welcomed the visitors, and Sir George Syme, the outgoing President, inducted Dr Barnett, who then delivered his presidential address His main topic was that of medical ideals and lay criticism; he welcomed the criticism, but warmly defended the education, discipline, ethical outlook, and practice of the profession He emphasised the attention paid to preventive medicine in the work of the Congress, and outlined the programme He concluded with some remarks upon the challenged ethics of members of hospital staffs, and of prospective changes in hospital accommodation and administration in New Zealand. The entire proceedings were concluded within an hour, and after the inaugural meeting the President and Mrs Barnett held a reception in the adjoining Art Gallery

The scientific meetings were held on Feb 4th, 7th, 8th, and 9th in the Medical School This consists of two buildings, one built in 1916 for the departments of pathology and bacteriology, and one completed just in time for the Congress The latter building is for the departments of anatomy and physiology which were formerly housed at the University of Otago The whole Medical School is now situated immediately opposite the Public Hospital, where the clinical instruction of students is carried out The two buildings turned out to be admirably suited for the purpose of the Congress A general Congress Museum and a special Public Health Museum were both on exhibition, and clinical demonstrations and surgical operations took place in the hospital daily before the sectional meetings began

A general plan was adopted for the scientific work Of the four full days of session one was to be devoted to a subject of New Zealand interest, goitre; one to a subject of Australasian interest, hydatid disease, one to a subject of general interest, diet and the alimentary tract, whilst the remaining day was reserved for presentation of new work Each section was asked to discuss these topics, in so far as they might be appropriate, before proceeding to other work

There were 12 sections—namely, those of medicine, surgery, obstetrics and gynæcology; pathology and bacteriology, preventive medicine and tropical hygiene, ophthalmology, otology, rhinology, and laryngology, neurology and psychiatry, pædiatrics; naval and military subjects, orthopædics, and radiology and medical electricity Combined meetings were frequently held

Visits and Social Functions

For sections interested, visits were arranged to the local Mental Hospital at Seacliff and to the Karitane Hospital for Infants, the Naval and Military Section conducted a staff-ride and tactical exercise A bureau was established by the Government Tourist Department, and visitors were enabled to arrange tours to the various places of interest throughout New Zealand The general office arrangements were excellent, much of the clerical work being carried out by students St Margaret's, the Ladies' College, and Studholme House, the residential quarters of the Home Science School, were made available for the accommodation of visitors Throughout the Congress the weather was excellent, which is unusual during a consecutive week in Dunedin, no less than four large garden parties were given without any of them being marred by rain The City Council entertained a party at Waipori Falls, some 30 miles from Dunedin, where the municipal power-house is situated On the Sunday visits were arranged to Waitati and Warrington, small settlements on the coast some 20 miles to the North, where many of the Dunedin doctors have country cottages

There was no congress dinner, but an official dinner was held at the Dunedin Club The President was in the chair, and proposed the toast of the King The Hon W Downie Stewart proposed the British Medical Association, and Dr Cooper Pattin (England), Dr Antill Pockley (Australia), and Dr Stanley Batchelor (President N Z Branch) replied The Mayor of Dunedin, Mr. H L Tapley, proposed the

Health Services, and the Hon J A. Young (Minister of Health, N Z) Sir George Syme (Melbourne), and Dr Peter Buck (Director of Maori Hygiene) replied Dr J S Elliott (Wellington N Z) proposed the Visitors, and Dr George Piness (U S A) and Dr L A. Kenny (Melbourne) replied Sir Charles Statham (*Speaker of the House of Representatives) proposed* the Australasian Medical Congress and the President replied

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The first meeting of the Founders of the new College was held on Feb 5th, when 18 out of 40 Foundation members were present Sir George Syme presided and described how the idea of the College originated It was first suggested in a letter from Dr Barnett, this year's President of the Medical Congress, to the Surgical Section at the Intercolonial Congress in Brisbane in 1920 , this led to certain activities among surgeons, but the foundation of a college was declined In 1924 Dr Mayo and others from the American College of Surgeons visited Australia and New Zealand, and several surgeons from those Dominions were shortly afterwards admitted to the Fellowship of the American College The opinion developed among these gentlemen that the principles avowed by this College should be universal, and Sir George Syme, Mr Hamilton Russell, and Dr H B Devine undertook a canvass in Australia In 1926 a provisional constitution for a College of Surgeons of Australasia was drawn up, 10 Foundation members were selected, and a provisional committee appointed—not without some adverse criticism A Council of ten was elected, which had met in Dunedin on the previous day, and appointed as officers President, Sir George Syme , Vice-Presidents, Sir A McCormick and Dr L E Barnett. Hon Sec and Treasurer, Dr A L Kenny , and as Director-General, Sir George Syme. By-laws and conditions of membership were drawn up, which include scrutiny of a candidate's education. house appointments, assistantships, teaching posts, hospital appointments, specialties, with the period of his practice, the percentage of professional time devoted to surgery or its branches, and membership of medical societies and contributions to literature A pledge is to be taken by the candidate and evidence must be produced of his surgical judgment and skill and of a high ethical standard These data will be *forwarded to the Credentials* Committee of the candidate's State, which will recommend accordingly

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THE COMMON COLD IN THE UNITED STATES.

It is a standing gibe against the medical profession that they cannot cure a common cold, that curse of our winter months, and it is true that this trivial disability has received little attention from investigators in spite of the amount of misery and off-time for which it is responsible The United States Public Health Service has recently undertaken an epidemiological study of minor respiratory diseases, and its second progress report[1] is based on the data provided by families of University lecturers and of medical officers in the services and public health service The records cover a period of 12 consecutive months, and are classified so as to establish a statistical definition for each diagnostic class and to ascertain for each the incidence-rate and the characteristics of its age, sex, and seasonal distribution The classification was chosen with a view to its use by laymen, and consisted of six groups cold in the nose or head, bronchitis with cough, influenza, sore-throat, tonsillitis or pharyngitis, hay-fever, and pneumonia It is obvious that such an arbitrary grouping leaves much room for redundancy and confusion, even when the symptoms are also given by the reporter. The writers doubt, however, whether any simple classification would have eliminated the difficulties altogether , they give a detailed diagnostic classification, showing all the combinations under which cases were reported, and a table of 13 symptoms, every one of which occurred in each of the five " minor " groups The symptoms thus selected are inflammation of the eyes, running nose, obstruction of nostrils, cough, expectoration, tightness of chest, sore-throat, sudden onset, chill fever, aching in body or limbs, headache, and constipation Those which indicate general constitutional disturbance are, as would be expected, least common in colds, more common in bronchitis, and still more common in cases of sore-throat No doubt the inclusion of some cases of acute follicular tonsillitis accounts for the apparently high frequency of chill and fever in the last-named group

Influenza

The influenza or " grippe " group is interesting as giving an indication of what symptoms are generally held by the physicians of America to constitute a diagnostic basis for this versatile condition It must be remembered that the majority of the reporters were medical practitioners dealing with cases under continuous observation in their own households The tables show that influenza is characterised by a more widespread inflammation of the respiratory tract and a higher frequency of constitutional symptoms. Running and obstruction of the nose, cough and tightness of the chest, and sore-throat naturally occur in a higher percentage in the three groups of cold, bronchitis, and sore-throat respectively, but all the other symptoms were recorded more frequently under the diagnosis of influenza than elsewhere. The authors conclude that as a group the cases classed as "influenza" differ quite definitely and objectively from those classed under the other heads. They compare their own figures with those from the influenza outbreak on Kelly Island,[2] which indicate that the "influenza" cases of this inquiry were more nearly related symptomatically to epidemic influenza than to common colds.

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[1] Public Health Reports of the U S Public Health Service Jan 14th, 1927

Attack-rate and Sex Incidence

Studying separately the 775 families (2498 individuals) for whom records are available for the whole year, it is found that the incidence-rate for respiratory disease, apart from hay-fever, is just over 2000 per 1000. For 1500 per 1000 of this "colds" are responsible, while influenzal pneumonia and pneumonia only occur in 4·8 cases per 1000. This incidence-rate in a specially selected group of white people, living under good hygienic conditions in cities, cannot be taken to represent the general incidence throughout the country.

When the sexes are separately considered it is seen that men have rather more respiratory infections than women, except in the sore-throat and hay-fever groups. Women are particularly lucky in respect of influenza and bronchitis, but suffer rather more from hay-fever. The incidence is highest in children under 4 and lowest over 55, declining steadily from its high level in the 25–35 age-group. Adolescents between 15 and 25 suffer least of all the young people. It is interesting to find that each clinical group shows a distinctive age distribution. The incidence of colds diminishes with advancing age, while "sore-throat" shows two peaks, one in childhood and one in middle life. The peak of bronchitis morbidity falls between 5 and 10, and its incidence shows the increase again in old age that would be expected from the mortality statistics.

Seasonal Incidence

For all ages the highest incidence (153·3 per 1000) was recorded for the latter half of January, after which all the conditions gradually declined until the end of November with an intermediate peak in July and early August and another during September. Similar curves were shown in the reports from college students published in the first pamphlet of this series, although their absolute incidence-rate was much higher than among the doctors' families. Both groups came from all parts of the country. No surprise will be felt at the time of highest incidence, but the autumn peak and subsequent decline in early winter is less generally recognised, and longer observations than these will be necessary before the events of 1924 can be established as usual. The hay-fever cases accounted, of course, for the midsummer peak, and the other groups when separately analysed showed peaks corresponding with those of the total curve. Nevertheless, the influenza cases had a distribution quite distinct from that of the colds, the maximum (11 per 1000) being in November and early December, whereas colds maintained a fairly even level (between 5 and 7 per 1000) from September to March. Bronchitis and sore-throat were more irregularly distributed than the others, and there was a striking parallelism between bronchitis and influenza throughout the year.

It would be interesting to have similar figures from this country for comparison. It seems that we cannot blame our peculiar climate for our respiratory distresses, since figures from all over the United States show an incidence in which Northern State runs roughly parallel with Southern, and all are comparable with our own experience here.

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[2] Public Health Reports, July 22nd, 1922.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

ANNUAL CONGRESS

THE Annual Congress of the Society took place on April 28th, 29th, and 30th, in the hall of the Medical Institution, Liverpool, Sir JOHN HERBERT PARSONS, F.R.S., the President, in the chair. On the first morning of the Congress the members of the Society were officially welcomed to the city by the Lord Mayor of Liverpool, Sir F. C. BOWRING, who also entertained them to luncheon on the same day.

Mr. E. TREACHER COLLINS read a paper on

Metaplasia of the Tissues of the Eyeball.

Metaplasia he defined as the production of specialised tissues from cells which normally produced tissue of other orders, owing to an alteration in environment, and not necessarily, or even primarily, to altered function. He divided the metaplasias met with in ocular tissues into embryological, pathological, neoplastic, and biological. As examples of the embryological, he cited the *formation of a new* lens from the termination of the secondary optic vesicle in larval newts, after destruction or displacement of the normal lens; the production of a lens from an ectoderm which did not normally produce it when either the optic vesicle or the skin overlying it was transplanted in embryo frogs, and in man the substitution of skin for conjunctiva when the eyelids in their development failed to close over the eye. Further examples were the formation, as a congenital abnormality, of bone in the subepithelial tissue of the conjunctiva, the formation of cartilage in place of fibrous tissue in the human sclerotic, and the substitution of retinal tissue for neuroglia in the optic nerve. As examples of pathological metaplasia, Mr. Collins mentioned the formation of bone in the choroid, the substitution of fibrous tissue for the endothelium lining Descemet's membrane, the substitution of stratified horny epithelium for secreting epithelium in cases of xerosis of the conjunctiva, the substitution of yellow elastic tissue for white fibrous tissue in pinguiculæ of the ocular conjunctiva, the substitution of vascular areolar tissue for Bowman's membrane and the anterior layers of the substantia propria of the cornea in cases of pterygium, and the formation of fibrous tissue from epithelial cells lining the lens capsule. In connexion with neoplastic metaplasia, he referred to the formation of spindle-shaped cells in growths primarily endothelial in character, and to the various forms of tissue of mesoblastic origin met with in connexion with tumours of the lacrymal gland and orbit. Under the heading of biological metaplasia he included differences in the constitution of the sclerotic in different species of animals, in some it was composed entirely of fibrous tissue, and in others it contained plates of cartilage or bone. In the choroid the subcapillary fibrillar net in certain animals was, he said, composed of a thin layer of fibres and branching cells, and in others of laminated cellular or laminated fibrous tissue, constituting the tapetum lucidum. The muscular tissue of the iris was composed in some animals of unstriated muscle fibres, in others of striated.

The PRESIDENT said he would not regard pterygium as a metaplasia in the narrow sense in which pathologists generally used that term.

Mr. R. AFFLECK GREEVES read a paper on

Operation for Partial Contraction of Socket.

The essential part of the operation, he said, consisted in the removal of fat and fibrous tissue. Where this was not done, he had not found that suturing had a permanent effect. He did not take away any conjunctiva. Any hæmorrhage which occurred was not difficult to control, nor did he find that the sutures cut out afterwards.

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[1] Public Health Reports of the U S Public Health Service Jan 14th, 1927

SCOTLAND

(From our own Correspondent)

Permanent Care of Feeble-minded

The Royal Institution at Larbert has launched an appeal for £70,000 to enable them to develop, to its full powers, the estate acquired for the purpose of colony-care of the feeble-minded Sir John Gilmour, Secretary of State for Scotland, opened the meeting held by the Lord Provost in the Glasgow City Chambers, and gave a direct and stirring exposition of the general problem and of the special work of the institution He lent the full weight of his official and personal views to the new development of "permanent care," explaining that this does not mean obligatory confinement, but simply the making of accommodation available for life-care in cases where the patient's guardians seek it He said that his grandfather had supported the institution from its beginning over 60 years ago, that his father had continued that support, and that he himself had done the same and meant to go on doing it, so convinced was he of the need for this type of accommodation and of the value of the particular scheme As Sir John Gilmour is controlling Minister of the General Board of Control, this expression of attitude has exceptional importance A comprehensive and elegant speech from Sir Donald MacAlister, the Principal of the University, further brought out the points of the appeal from both the medical and the public points of view

A short time ago the Scottish Council of Women Citizens Associations handed to the Larbert Institution the handsome sum of £12,000 on condition that the institution would develop a colony for permanent care The agitation that ended in this sum of money began over four years ago, and the Women Citizens succeeded in rousing the authorities of Scotland to a consciousness of their duty in this field The present appeal will reap where the Women Citizens have sown, and there is little doubt that the £70,000 will ultimately be secured

Radiological Facilities at Edinburgh Royal Infirmary

At the monthly meeting of the Edinburgh Insurance Committee a letter was read from the clerk and treasurer of the infirmary stating that it had been decided to extend facilities for the examination or treatment by the radiologist of patients who are unable to pay the usual private fees, and for treatment by apparatus and appliances not otherwise available in the city or district—on the footing that the patients would give an appropriate donation to help to defray the expense incurred The committee expressed their great appreciation of the facilities thus placed at the disposal of the community by the infirmary authorities, and each practitioner on the committee's list will be communicated with This is an excellent example of how such expensively public-provided installations can be used to extend the powers of the general practitioner

Change of Doctor

The Coatbridge Insurance Committee some time ago passed the following resolution "That the Committee is of opinion that a material cause of the increase on sickness benefit claims is due to the present system, which allows change of doctor at any time, and that the former system should be reverted to and change of doctor only be permitted half-yearly" The Edinburgh Committee discussed the point at great length once more and, by a large majority, agreed to recommend that the present system be retained Probably Coatbridge means the *fear* of change of doctor rather than the actual change The known administrative facts seem to point that way

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New Bethlem Royal Hospital —The Governors will shortly start upon the building of the new hospital on the Monks Orchard Estate at Shirley, near Croydon, and tenders are being invited for the first portion It is expected that the buildings will be completed in less than three years

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Public Health Services.

SCHOOL MEDICAL SERVICE.

Name of district	No on roll	Av elem school attendance	No of routine children examined	No of special examinations and re-inspections	Percentage of children found on routine examination requiring treatment *
Gillingham	7,579	6,827	2,307	2,169	16 0
Bootle	12,071	10,852	3,728	12,690	26 0
Bedfordshire	—†	—†	5,182	1,451	18 85

* Excluding uncleanliness and dental defects † Not given.

Gillingham

Dr W A Muir gives a concise statistical summary of the medical work during 1926, of which the net cost to the ratepayers was approximately ¾*d* in the £ "The washing and sanitary accommodation inside some of the schools," he writes, "does not reach a high standard of cleanliness, quite apart from the question of some of it being out of date from a hygienic standpoint The influence of precept on the young child is very little, that of example is immeasurable" Uncleanliness of this sort should not be tolerated by any education authority as it cuts at the roots of the whole medical work, in Gillingham it is associated with a lack of facilities for treating exceptional children in open-air and special classes, and an absence of orthopædic arrangements found in many comparable areas The high percentage of parents (90 per cent with entrants) attending the medical examination shows the interest taken by parents in the welfare of their children The medical work is of a satisfactory nature all round, defects of the nose, throat, ears, and eyes are well treated. Here, as elsewhere, there is a disinclination to take full advantage of the dental treatment offered; and only 33 per cent of those requiring dental treatment obtained it Measles and mumps epidemics during 1926 entailed much extra home visiting and laid an additional strain on the nurses, of whom there are only two This may account for the rise in the numbers of children found verminous from 16 3 in 1925 to 17 3 per cent in 1926

Bootle

Dr F T H Wood opens his nineteenth annual report with a satisfactory answer to the question as to whether the medical service has evidence of any substantial improvement in the physique and hygiene of the school population Personal cleanliness and freedom from parasites show a remarkable change, largely due to the activities of the school medical service Physique, as estimated by measurement of height and weight, shows an advance in places, while there is an obvious diminution in the severe degree of rickety deformities formerly seen Defects of the teeth, eyes, nose, and throat call for more attention to the health of the pre-school child, only by sustained effort from the earliest ages can the maximum improvement in national health be maintained. Referring to Dr H C C Mann's report to the Medical Research Council on the feeding of school-boys, Dr. Wood believes it would be to the advantage of the public health of the country if—concurrently with the improvement now being aimed at in the cleanliness and safety of the milk-supply—a large increase in its consumption above the half-pint daily average could be obtained In view of the continued unfavourable economic conditions the increase in ill-nourished children from 6 1 per cent in 1925 to 7 6 per cent in 1926 is not surprising Using the "forced whisper" test in the intermediate and leaving groups some defect in hearing was recorded in 12 5 per cent boys and 10 0 per cent girls in the great majority the defect being of moderate degree The presence of these minor degrees

The paper was discussed by Mr **THOMSON HENDERSON** (who stated that he had performed a similar operation ten years ago), Sir **ARNOLD LAWSON**, Mr **GEORGE MAXTED**, Mr **J GRAY CLEGG**, and the **PRESIDENT**

Dr **GEORGE YOUNG** (Colchester) read a paper entitled Practical Keratometry, which was discussed by several members

Dr **P STIBBE** demonstrated specimens illustrating the comparative anatomy of the nictitating membrane

Thursday afternoon was devoted to a discussion on

Nystagmus (other than Miners')

Mr **BERNARD CHAVASSE** said that there were several pathways along which the subject could be approached Nystagmus could be regarded either as a movement, a disease, a symptom, an adaptation, a habit, or as a problem in neurology These views represented a natural series in a progressive order of research, culminating in a study of the nervous mechanisms as constituting the heart of the problem

True nystagmus—i e, that which was present when the eyes were looking straight-forwards—might increase in certain directions of the gaze, and so assume the primary characteristic of a pseudo-nystagmus He suggested that the terms "with field central," "with field peripheral," "with field upwards," &c, should be used to replace the old distinction between nystagmus and pseudo-nystagmus If the nystagmus was jerking, but with a widespread field, and was uninfluenced by occlusion, a more widespread affection was probable If the movements were dissociated in the two eyes, it was likely that a comparatively peripheral lesion was present If it was associated, the physician would suspect a lesion of higher or more remote centres, influencing the intact neuromuscular end-organ as a whole Any bilaterally acting semi-superable obstacle to acute vision, whether actually existing or by the induction of a habit, might produce a smooth bilateral nystagmus, with its widespread or universal field Mr Chavasse discussed at some length, with the aid of diagrams, nystagmus as a neurological phenomenon

Dr **HUGH JONES** exhibited a model which had been devised for demonstrating the positions of the semicircular canals in relation to other structures in various postures, and the movements of the otoliths and the consequent pressure exerted by them He demonstrated the absence of nystagmus in a man who, following double acute labyrinthitis which he refused to have treated, was rotated rapidly ten times in the revolving chair and then suddenly stopped, both labyrinths were entirely inactive In all vestibular tests, said Dr Jones, the absence of reaction was at least as important as the presence of reaction

Dr **GORDON HOLMES** dealt with the neurological aspect He said the field of vision was dependent on vestibular components which compensated movements of the head and body, on visual components which compensated movements of the eyes *plus* voluntary components which adjusted the eyes, and on stimuli of sight in the field of vision All these must be taken into account in any discussion on nystagmus The neurologist was chiefly interested in the central mechanisms normally concerned in the adjustment of the eyes, and to him the vestibular component was the important one He proceeded to detail the parts of the central nervous system from which nystagmus might arise It depended on lesions of those paths and centres which were limited to the hind-brain and intimately connected with the vestibular apparatus These he dealt with in detail He dissented wholly from the view put forward in a recent monograph that nystagmus could be regarded as a tremor of the eyes, it was, he said, a definite coordinative act It could occur even when the muscles were palsied, or indeed completely paralysed He had described a case of complete external rectus palsy on the right side, associated with a cerebellar lesion, in which nystagmus was regular and symmetrical in the two eyes This must be, at least in part, because there was a reciprocal innervation of the antagonistic muscles—i e, the movement was largely the result of relaxation of the internal rectus of the right eye Though, usually, nystagmus was designated according to the direction of the rapid phase, the slow phase was the essential feature In many conditions there was a terminal fixation nystagmus—that is there were a few jerks of the eyes when the patient first fixed in any position but that of primary rest It occurred, for instance, in asthenic states, as during convalescence from an acute illness, and in intoxications, especially chronic alcoholic intoxications He thought this was the form of nystagmus occasionally found in alcoholic neuritis, though a definite lesion of the nerve could not be excluded It might also be the result of a defective fixation reflex, such as occurred in amblyopia He asked whether nystagmus ever resulted from a primary lesion of the cortex or of the fore-brain as such He had examined thousands of cases of gunshot wound of this region, and had never seen nystagmus of any form resulting from such wounds unless the brain was also extensively infected He believed that in no condition did nystagmus of the type he had referred to result from a lesion of the cortex, or even from a lesion of any part of the fore-brain

Mr **SYDNEY SCOTT** discussed the subject from the otological point of view, remarking at the outset that 30 years ago Dr Hughlings Jackson had described a case of labyrinthine nystagmus Most otologists had accepted nomenclature concerning nystagmus which was purely conventional, and possibly it might clash with that adopted by ophthalmic surgeons and by neurologists Otologists' observations were made in people with normal vision, and in considering labyrinthine nystagmus he would exclude cases of central nervous disease, disseminated sclerosis, Friedreich's ataxy, and similar conditions It was assumed that nystagmus could be set up in the labyrinth as the result of irritation, and by a caloric stimulus When it was evoked by such stimuli it must be assumed there was no spontaneous nystagmus in the particular person, as the means of producing it were all excessive stimuli When testing for this phenomenon it was important to get the patient to look at a small object held not less than 18 inches from the eyes, the head being kept quite still and the eyes following the moving object as it was brought to the extremity of the binocular fields Nystagmus evoked with the eyes beyond that limit was disregarded in otological clinics as it was present in 60 per cent of normal people when that range was exceeded Sometimes he was asked, in particular cases, whether the nystagmus was the cause of the vertigo, or vice versa The otologist regarded both as due to a common cause, neither was dependent on the other But nystagmus was not associated with vertigo when it was not of labyrinthine origin When using the caloric test it was very important to have the patient's head fixed in a slightly forward position in relation to the trunk Apart from cerebellar disease, there were certain conditions in which labyrinthine disturbance occurred for a short time In acute otitis media a nystagmus was sometimes met with which must be distinguished from that which followed destruction of the labyrinth When the phenomenon was due to otitis media it would disappear when the tympanum was drained, and there was no immediate risk of extension to the labyrinth or to the meninges If there was a negative response to the caloric test, however, the labyrinth should immediately be opened Nystagmus was also present in chronic fistula

(*To be concluded*)

WESTMINSTER OPHTHALMIC HOSPITAL—The annual report of this hospital records the unusual experience of a reduction in the number of patients treated, in-patients having fallen from 919 to 863, and out-patients from 14,905 to 14,010 The committee attribute these reductions to the general strike in May last Casualties, however, increased from 2007 in 1925 to 2285 health. That however, was not the case, and while over £1,000,000 a year was raised by this taxation, the Government were not spending more, he believed, than £200,000 on medical research

On a division the resolution was agreed to by 251 votes to 116

ACCIDENTS IN MINES

On Wednesday, April 27th, Mr George Hirst moved :—

" That this House deplores the heavy loss of life and the large number of non fatal accidents in mines, and regrets the failure of the Government to give effect to repeated pledges that every possible step would be taken without delay, whether by legislation or otherwise to secure the fullest protection to those engaged in this dangerous industry "

He said that one would imagine when motions of this description had been introduced from time to time in that House and when statements had been made bringing the facts before the notice of the Government that the latter would do all in their power to introduce regulations to minimise accidents in mines But nothing had been done so far as they could discover to prevent a recurrence of the serious accidents which had taken place, and were still taking place This was a very important question, and ought to be dealt with very seriously He had made a comparison between the number of accidents which occurred during the time when the men were working seven hours a day and the number of accidents under the eight hours' day, and he found that the latter figures were tremendously larger than the former Working out the averages of fatal accidents during the eight hours' system and the seven hours' system over a number of years they found that the figures showed 260 more deaths per year under the eight hour day than under the seven hour day The Secretary for Mines had stated in answer to a question that there had been 306 deaths, and 1214 persons had been seriously injured through accidents in coal mines, in the first three months of 1926 under the seven hours' rule The corresponding figures for the first three months of 1927 were 324 killed and 1291 seriously injured. The purpose of that debate was to draw the attention of the Mines Department to the fact that something ought to be done to prevent the terrible accidents He made several suggestions in 1925 during a previous debate on this subject as to steps which he thought the Mines Department ought to take The proposal to abolish the Mines Department was absolutely ridiculous He hoped that the Chancellor of the Exchequer and the Government would leave that Department alone. Instead of doing away with it they ought to add to it more people who had direct knowledge of the working of mines so that they might minimise the number of these accidents to a great extent One of the suggestions he had made was that more shafts should be sunk. At the present time mines were being worked where men had to walk from two to three miles from the shaft bottom to the working face The sinking of new shafts would have a tendency to reduce accidents It would improve the ventilation and improve the health of the miners It would also reduce the risk of explosion and also falls from the roof and sides by stopping the accumulation of gas

Mr Grundy, in seconding the motion, said that the Mines Department had all the accumulated expert knowledge in regard to this subject, and the evidence which had been taken at various inquiries into accidents that had occurred from time to time, yet since 1911 there had been no legislation aimed at giving additional safety to the men who worked under these dangerous conditions There were 3000 pits but he wished to ask whether there were sufficient inspectors to inspect them ? What was being done with regard to nystagmus, about which there were startling figures ? A committee of the Medical Research Council reported in 1922–23 that the chief cause of the disease was insufficient illumination, and that the cases severe enough to cause disablement could by degrees be entirely prevented by improving the standard of lighting From 1905 to 1912 there were 1760 cases of nystagmus , in 1913, 4550 , in 1920, 7028 , in 1921, 6717 , in 1922, 9155 , in 1923, 11,142 , in 1924, 10 906 , and in 1925, 11,334 If it was possible by any means, no matter at what cost, these cases of nystagmus ought to be decreased There was only one class of employment that had a greater fatality-rate than mining In 1922 fatalities in mines amounted to 95 , in shipping it was 1 33 In 1923 the figure was 1 06, against 1 14 for shipping , and in 1924 it was 1 05, against 1 39 for shipping The non-fatal accidents in mines in 1922 was 160 056 In shipping they were 18,066 In 1923 non-fatal accidents in mines were 177,011 , in shipping they were 1791 Accidents in mines were eight times as many as in docks, and five times the average of factories, docks, quarries, constructional works and railways taken together

Mr R Hudson moved to leave out from the word " mines " to the end of the motion, and to add instead the words :—

" but recognises that steady progress is being made towards the attainment of safer conditions by means of regulations, research, inquiry, and inspection, as a result of which the safety of mining in the country compares on the whole very favourably with that in other countries "

He said he did not think it was right that party capital should be made out of a subject which affected the lives and happiness of so many of their fellow men engaged in one of the main industries of the country When they read the annual reports of the inspectors of mines they must be impressed with the fact that they harped year after year on one subject—namely, the avoidability of many of these accidents But in spite of that they had the same thing cropping up again and again After looking at the more depressing side of this subject had they no ground for hope ? If they compared the conditions in this country with those abroad were we better off, or could we learn any lessons from foreign countries ? He had looked up in one of the reports the figures of the mean annual death-rate for two periods of ten years—namely, 1903 to 1912 and 1913 to 1922 In Great Britain the percentage was 1 3 in the first period and 1 2 in the second period , in the United States the percentage was 5 1 in the first period and 4 3 in the second period , in Belgium 1 0 and 1 2 ; in the Netherlands 1 8 and 1 7 , and in Germany 2 1 and 2 8. These figures applied to the same period The only country which had a lower death-rate than ours in this respect was France, where it was 1 0 If they examined the British figures they would find that there had been a sensible improvement There were fewer people killed in 1925 than in 1924, and if they took the rate per 100,000 man shifts worked between 1922 and 1925 they would find that it had fallen from 66 3 to 63 9 He agreed that they ought to inquire whether everything possible had been done to minimise accidents, but never during the past ten years had so much been actually done to deal with the really basic problems of industry as they affected the health efficiency and the comfort of the individual worker The Institute of Industrial Psychology, the Medical Research Council, the Industrial Fatigue Research Board, the Safety in Mines Research Board, and other organisations too numerous to mention, were carrying on an intensive campaign An immense amount of information was being gathered from other industries which was applicable to coal mines These investigations had shown the importance of ventilation, and the subject was being intensively studied by a committee of the Institution of Mining Engineers, and when the engineering problems had been solved, they might anticipate a corresponding diminution in the accident-rate The importance to the country as a whole of these discoveries needed no emphasising when they considered the extent to which our shallower seams were being worked out There were some interesting results showing the human factor as the cause of accidents, from which it appeared that in any particular group of men there were certain individuals whose liability to accidents was greater than others If means could be devised of discovering these people at an early age and setting them to jobs involving less danger the accident-rate would decrease, not only in mines but in other dangerous industries as well. It was the daily accidents which they wanted to avoid, even more than the big spectacular accidents which struck public opinion from time to time He had seen it estimated that compensation for accidents imposed a cost of something like 3*d* per ton of coal raised in this country A great deal had been done by way of inculcating " safety first," but there again education was sadly needed, and the need for it was strikingly illustrated in the report of the Inspector for the Northern Division Speaking of 1925 he said that of the deaths caused by explosives 67 per cent were due to clear breaches of the regulations ; 61 of the non-fatal cases were due to the same cause , while 30 per cent of the remainder could have been avoided by the exercise of due caution The seven years' figures were worse still Ninety per cent of the fatal accidents and 80 per cent of the non-fatal accidents were due, he said, to breaches of the Explosives in Coal Mines Orders That was a situation appalling to contemplate In another passage the inspector deplored the lack of any real organised coöperation in safety matters between owners and workmen There was, he said, a tendency on the part of the workers to expect all action for protection to come from the official side. It had been said that no action had been taken by way of legislation to assist in the prevention of accidents, but he thought that the passing of the Mining Industry Act of last year and the increase in the amount of money available for the welfare fund could not fail by increasing the general physique and well-being of the men engaged in the industry to have its results in diminishing the number of accidents

Mr Clarry, in seconding the amendment, said that the work of securing greater safety in mines was being carried on to the best of the ability of those engaged in it There was no section of the community which would not do everything in its power to render the mines safer in working. Science and human ingenuity were hard at work all the time with that end in view of deafness is often overlooked, although they are of considerable moment to educational progress and success in the labour market No school department was closed on account of infectious disease during the year Of the total number of days lost through sickness impetigo was responsible for the largest amount Of the 82 ascertained educable feeble-minded children in the borough 21 attend special classes, 28 are in ordinary elementary classes, and 31 are not attending any school or institution Supervision of this last group is obtained by home visits from the nurses, supplemented by individual re-examination by the school medical officer

Bedfordshire

In this report Dr R T Herdman shows how difficulties can be met by goodwill and efficient organisation For the sake of economy and better education, older children are being taken away from the small village schools to larger ones some distance away. Transport difficulties are real, but are being got over, as is the difficulty of the midday meal which is being provided at the school With good management and by making full use of school gardens, themselves agencies of great educational value, it is found possible to keep the actual cost of the food that has to be bought to 1*s* a week per child These school dinners have other advantages in the training of children, and may help to maintain the higher standard of physique and nutrition shown to exist in the year under review The risk of chill from sitting in wet boots is obviated by the use of slippers, supplied by the parents or made in the school at a small charge for material—another instance of practical education It is suggested that these elder children could be medically examined at their local rural schools, so as to give their parents opportunity of direct speech with the examining doctor, the teachers at the senior schools being notified in writing of any defects discovered There are as yet no special schools in the county maintained by the authority , the obstacles of providing them in such scattered districts are manifest, but it is to be hoped they may be overcome by organisation similar to that which has produced central schools

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED APRIL 23RD, 1927

Notifications —The following cases of infectious disease were notified during the week Small-pox, 358 (last week 348) , scarlet fever, 1202 , diphtheria, 761 ; enteric fever, 47 , pneumonia, 1061 , puerperal fever, 38 , puerperal pyrexia, 98 , cerebro-spinal fever 8 , acute poliomyelitis, 5 , acute polio-encephalitis, 1 , encephalitis lethargica, 30 , continued fever, 1 , dysentery, 8 , ophthalmia neonatorum, 120 No case of cholera, plague, or typhus fever was notified during the week

The cases of small-pox were notified from the counties of Derby 18 (10 of these from the county borough), Durham 149, Kent 1 (Gravesend), Northumberland 17, Nottingham 1, Yorks North Riding 7, West Riding 72, Monmouth 90 (of these 57 from Abersychan and 18 from Blaenavon) The small outbreak at Hendon (Middlesex) is still unnoticed in the official return , there have been 8 cases with 3 deaths reported in the daily press

Deaths —In the aggregate of great towns including London there was no death from small-pox, 1 (0) from enteric fever, 81 (4) from measles, 4 (1) from scarlet fever, 46 (18) from whooping-cough, 27 (7) from diphtheria, 53 (14) from diarrhœa and enteritis under two years, and 82 (17) from influenza The figures in parentheses are those for London itself

The fatal case of small-pox from Sheffield included in the return for March 26th occurred in a prematurely-born infant three weeks old, whose mother had contracted the disease The child weighed only a little over 1 lb at birth and was so weakly that it was deemed inadvisable to vaccinate it Dr F E Wynne, who sends us this information, considers it unlikely that the child would have survived in any case No information is yet available as to the type of small-pox in the three fatal cases reported from Hendon

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

PATENT MEDICINE DUTY

ON Tuesday, April 26th, the House of Commons considered the Budget Resolutions on Report

On the resolution for the continuance of the additional excise duty on patent medicines,

Lieut -Commander **KENWORTHY** said he believed the actual amount produced by the duty was something like £300,000 a year This was a very small part of the total revenue, but it meant a good deal to very poor people who had to buy these patent medicines because they could not afford, in many cases, to get any other kind of doctoring. He did not know whether the patent medicines did them any harm or good , that might be arguable, but the fact was these people took them Well-to-do people who bought these medicines did not feel the tax at all, but poor women and others felt every halfpenny when they were living on a few shillings a week and were beginning to ail in their advancing years It would be a humanitarian act for the House to remove this tax on the sick and ailing He never heard of any doctor who was particularly keen on this tax, though he dare say *some, for purely selfish reasons,* might object to people buying patent medicines instead of consulting a doctor

Mr **HARRIS** said that it must be assumed that these medicines were of some good for health, for if not the Ministry of Health, would, they must assume, interfere and prohibit their use and sale If they were good for curing ills, as they were advertised to be, surely it was a wrong thing to subject them to a duty dating back as far as 1783, which had never been defined or codified or made clear to the public, and which, from the point of view of revenue, or of incidence, or of finance, or of cost of collection, was thoroughly unsound in principle, and quite against the canons of sound finance

Mr R **McNEILL** (Financial Secretary of the Treasury) said that the revenue derived from this duty was pretty considerable They estimated the income from it this year at £1,340,000, which was not to be despised in times like these On that ground alone he would have to ask the House to maintain this duty The reason why the duty was being made permanent was that as a matter of fact since it was doubled in 1915, the working of the duty had shown that this particular commodity could very well bear the tax which, had been put upon it for ten years without in any way decreasing consumption, and at the same time allowing for a very large increase of revenue Most people would agree that if a tax was put too high on any particular commodity of this sort, the tax showed itself in a decrease of revenue In point of fact, since the rate was doubled in 1915 the actual yield from this duty had gone up nearly four times This showed that this was a legitimate source of revenue which it was now proposed to make permanent This tax was originally, and was still in principle a tax on quack medicines No real medicine recommended by a qualified physician and coming under a certain definition and supplied as part of the ordinary British Pharmacopœia came under the duty at all The tax applied to patent medicines which were or purported to be of a proprietary or secret character

Major **CRAWFURD** The right hon gentleman said this was originally meant to be a tax on quack medicines He is surely not going to apply that phrase to all patent medicines The tax may be a good or bad one, but all proprietary medicines are not necessarily quack medicines

Mr **McNEILL** That of course depends on what is your definition of quack, but that was the original intention

Mr **HARDIE** said that poor people who could not afford to go to Harley-street specialists or to get any specialised advice often went without food to buy some positive remedy which they had seen advertised in a newspaper and which they hoped would do good to some member of their family The number of people who could not get specialised medical advice and treatment was increasing, and such people took these patent medicines as the next best thing He urged that the Government should give some guarantee of these medicines

Mr **THURTLE** said that it was the poor who had so little money to spend on medical advice and attention that were most in need of it They lived in very crowded housing conditions, and consumed inferior food He protested against the absence of any representative of the Ministry of Health during a debate which concerned the health of the great mass of the people

Mr **MOSLEY** said that if these patent medicines were bad they should be stopped by law, but if there was any good in them they should not be subject to taxation But he would not object to this tax on possibly indifferent medicines if the Government was returning the proceeds of the taxation for the improvememt of the general science of medicine and the Bill would pass, but she was sorry that the Government were going to oppose it She believed that women had a right to judge whether they ought to work or not

After further discussion,

Mr RONALD MCNEILL (Financial Secretary to the Treasury) said that if this Bill were passed it would effect a far-reaching and important change in the administration not only of the departments of the central government of the State, but all the departments of the innumerable local authorities Whether hon Members thought that the proposed change would be desirable or undesirable they must recognise that it could only be made on the initiative of the Government of the day There had not been the slightest indication in the debate that there was any support for the Bill among the great popularly elected bodies of the country He opposed the Bill first of all in the interests of women themselves The ultimate tendency of such legislation would be to discourage the employment of women, married or unmarried This was not a question which ought to be decided on principle The whole question here was whether or not the Bill would improve or not improve the public service, and, secondly, whether the proposed change would do an injustice to any individuals, either men or women Inefficiency was a relative term A person might be very efficient at one moment and quite inefficient at another That was why he thought there was no real analogy between the public service and other callings, such as medicine and the law It did not make much difference to the solicitor or the doctor or the actress if they happened to be in a state of health at any given moment which compelled them to retire temporarily from their work It might be an inconvenience and a loss, but it did not affect gravely or permanently their efficiency in that particular employment It was a totally different thing in the Civil Service and in the carrying out of the great machinery of government. Obviously women and men alike in the public service must take the ordinary sickness risk. It could not be eliminated, but they tried to get the risk as low as possible by medical examination. What the supporters of this Bill were asking the Government to do was to increase the sickness risk—the risk of discontinuance of service—in the case of women after they were married It was common medical knowledge that in some cases pregnancy inflicted great loss of health and strength and spirits on a woman, sometimes for many months, while others who were differently constituted would go on until within a few days of confinement without apparently suffering any loss of physical vigour These facts added enormously to the sickness risk which the Government would have to take with the consequent immense loss over the whole service of efficiency on which the conduct of the service rested Having regard to all these considerations, he hoped that the House would not be led astray in this matter

Dr LITTLE said that the opposition to the Bill seemed to be largely founded on what he thought were fallacious medical propositions The objection to the employment of women seemed to rest largely on a physiological incident of life among married women But did men suffer from no sexual disability? He thought that anyone comparing the numbers of absentees in any service, both male and female, would find quite as many males suffer from sexual disability, and absences from this cause were an important set-off to the absences of women as a result of disability arising from sex The universities of this country had had this question before them, and had solved it for themselves They had made no distinction whatever between the sexes He submitted that there was no support for what he called the medical argument It had not been urged by any medical authority, and it fell to the ground the moment that it was examined

On a division the Bill was rejected by 84 votes to 63

PROTECTION OF DOGS BILL.

On April 29th **SIR ROBERT GOWER**, in moving the second reading of the Dogs Protection Bill, said that it provided that it should be unlawful to perform any experiment of a nature calculated to give pain or disease to any dog for any purpose whatsoever, either with or without anæsthetics, and that no person or place should be licensed for the purpose of performing any such experiments On three occasions this Bill had secured a second reading in that House, on two occasions without a division, and once with a division when it passed through the Committee subject to an amendment which was suggested by the Government, and when, had it not been for an unfortunate accident, which prevented it securing a third reading, it would undoubtedly have been placed on the Statute Book The Bill was not brought forward with any desire to obstruct or hamper legitimate surgical or medical research The general question of the vivisection of animals did not arise in the consideration of this Bill, which applied to one animal only—namely, the dog Since the Bill was presented to the House a rather keen controversy had been waged in the *Times*, and two eminent medical men, Sir Charles Ballance and Mr Walter Spencer, inserted in that newspaper a manifesto in opposition to this particular Bill In reply to that manifesto a letter appeared from Dr. Fielding-Ould, who, he thought, would be admitted by those connected with the medical profession to be one of the most eminent and distinguished members of that profession After referring to the statement which Sir Charles Ballance and Mr Spencer had made, Dr Fielding-Ould said —

> "We cannot find any justification for the continued use of cats and dogs in research These domestic animals have become, by close association with man, more and more sensitive, and unless vivisectors can give convincing proof of the necessity, then their continued use for experimental purposes amounts to deliberate cruelty, and offends the moral sense of very many thinking people "

He went on to say —

> "The onus of proving the necessity lies with the vivisectors and at present there is no proof whatever, nor does Sir Charles Ballance attempt it "

He also said, and he (Sir R Gower) thought that hon Members who had followed this controversy for years past would agree that such was the fact —

> "It is the reasoned opinion of very many scientific men that dogs and cats may reasonably be exempted from experiment without impeding the progress of scientific research in the least "

The House would observe that in this letter Dr Fielding-Ould laid down a very definite challenge not only to Sir Charles Ballance and Mr Spencer but to the medical profession at large They would imagine that if the case of those who were opposing the Bill were strong they would have accepted the challenge laid down and would have written to the *Times* or to some of their publications providing the proof asked for It was perfectly true that Sir Charles Ballance and Mr Spencer considered it necessary to reply to Dr Fielding-Ould's letter in the *Times*, but in their reply they emphatically disclosed their objection to the Bill They made no attempt at all effectively to rebut the statements of Dr Fielding-Ould, but gave as their chief reason of objection to the Bill the following "The Dogs Protection Bill is the thin end of the wedge, the object being to stop all research by vivisection in this country" Lord Banbury, when introducing a Bill similar to this in the House of Lords, some time ago gave a quotation from a speech made by Sir Lambert Ormsby in April, 1922, as follows —

> "Experiments on dogs might now be discontinued All that can be found out by physiological experiments for application to human beings has long since been discovered, and repetitions are unnecessary and cruel "

No one could charge those gentlemen whose opinions he had quoted with being fanatics or cranks, or with not having the interests of the human race at heart He had studied very carefully the literature which had emanated from the Medical Defence Council on this particular question, and he had also carefully read the correspondence which had taken place not only in medical journals but also in the lay press, and it was most significant that except on one occasion no attempt had been made by opponents of this Bill or by members of the medical profession, to prove that it was necessary in the interests of humanity that vivisection experiments should be made on dogs The single exception was contained in a pamphlet issued by the Research Defence Society which contained an article by Dr Starling, the Foulerton Professor of the Royal Society, in which he made this statement —

> "Why is the use of dogs so essential in medical research? No one will dispute that to gain a knowledge of living functions recourse must be had to living animals and those animals must be such as can be kept in comfort and health within the precincts of a laboratory "

The House would observe that the question of finance entered into the opinion which Dr Starling had expressed He went on to say—and this statement was rather an important one—that —

> "The ordinary farm animals are, therefore, excluded by this fact alone but a more fundamental objection to their use, so far as information to be gained by experiments on them is concerned, arises from the wide differences which exists between the structure, functions and habits of their digestive organs and those of man "

If that contention of Dr Starling was correct it might perhaps be argued that a very strong case was made out against the Bill but this opinion of Dr Starling was in direct opposition to the evidence which was given by one of the greatest medical scientists that this country had ever known—namely, Sir William Osler—before the last Royal Commission on Vivisection, and that evidence was not contradicted by any other medical man or by anyone else Sir William Osler, in his replies to questions, had said that a pig had got a stomach and intestines much more like those of man The pig was used in old days, and he supposed that Galen's experiments were largely upon pigs He had never tried to anæsthetise a pig, but given a pig

After further discussion,

Colonel **Lane Fox** (Secretary for Mines), said that while every hon Member was most anxious to do his utmost to try to reduce the rate of accidents in mines when that was coupled with the assertion in the motion that the Government had failed to carry out their pledges it was obvious that the Government could not advise their supporters to allow the motion to pass, and that an amendment must be moved to put the matter on a better basis The amendment, he thought, expressed the feeling of the vast majority of the House Legislation alone was no use in this matter, and in his belief they had ample legislation They could do far more by regulation, and the Mines Department had been carrying out in the most thorough way by inquiry, research, regulation, and inspection the duties which had been laid upon it The suggestion had been made that the proposed reorganisation of Ministries might involve decreased efficiency in safeguarding the health and safety of miners He could quite safely say on behalf of the Government that that would be far too high a price to pay for any economy In carrying out any economy the House might rest assured that the full interests of the health and safety of those who worked in the mines would be considered, and no rearrangement would be allowed to interfere with that most necessary duty He did not want to say that because this country was in a far better position than any other country, except perhaps France, in this matter that they ought to be satisfied , but at the same time let them not paint the picture too black If they went through the periods of the year they would find that the accident and death-rate was slowly but steadily decreasing They had better try to face facts instead of juggling with figures, which were very dangerous They had set up a Water Dangers Committee which had been travelling round the country and collecting the fullest information from all sources He hoped that that Committee would shortly report They could not legislate in a hurry, and perhaps make a mistake without investigating The Safety in Mines Research Board, which was financed by the Welfare Fund, but was controlled and worked hand in hand with the Mines Department and under its supervision, had a number of daughter committees These committees were dealing with the support of workings underground, with ventilation, explosives, and so on, as well as with wire ropes and spontaneous combustion A new experimental research station had been set up at Buxton which he hoped would be a very great improvement on the former station He hoped that the new station would be officially opened in June, and that its work would be of enormous value to the mining industry At the present time they were already carrying out coal-dust experiments under various conditions, fire damp explosions, and testing mining explosives. In addition, there was a considerable amount of laboratory work being carried on The main laboratory work would continue to be carried on in Sheffield The questions of spontaneous combustion and the use of electricity were not being lost sight of

On a division the amendment was carried by 201 votes to 114

EXPERIMENTS ON ANIMALS

On Thursday, April 28th, Lieut-Colonel **Fremantle** presented a petition signed by leading members of the medical profession concerned in medical education, including 1497 members of university staffs, medical schools, and teaching hospitals, praying the House not to support any Bill to place further restrictions on experimental work on dogs or other animals, and asking for such an alteration in the existing law as would permit, under proper provisions for the prevention of pain, and efficient inspection and control, the use for purposes of research of some of the numerous stray and unowned dogs

FRIDAY, APRIL 29TH

MARRIED WOMEN (EMPLOYMENT) BILL

Sir **Robert Newman**, in moving the second reading of the Married Women (Employment) Bill, said that it proposed to confer on married women the right to work It did not in any way interfere with the legitimate responsibilities and discretion of local authorities It did not compel any public authority to employ a woman because she was married The Sex Disqualification (Removal) Act, 1919, *laid down that* "a person shall not be disqualified by sex or marriage . from being appointed to or holding any civil or judicial office or post" Somehow or other that Act did not seem to have had much effect A woman who was old enough to marry was old enough to decide whether she should continue in her occupation There were hundreds of thousands of women who were earning their own living and he believed that half a million of them were married Therefore it was rather late in the day to bring forward the argument that the place of a woman was in her home There was no justification to refuse the appointment of a married woman because she was married or to dismiss her for the same reason People who objected to the employment of married women as teachers or in the public service forgot that in other walks of life married women were playing a most prominent part He thought he was not wrong in saying that some of the leading lady doctors were married. One found them in Harley-street and other places If a woman could hold a high position in a highly scientific profession like medicine surely it was rather ridiculous to say that she was not qualified to carry out duties in other directions It was rather extraordinary that they should dismiss a school-teacher because she was married, and yet a woman occupied the position of second-in-command of the educational system of the country

Mr **Pethick-Lawrence**, in seconding the motion for the second reading of the Bill, said that what they were really out for in the measure was to secure what they might rightly call the economic charter of the professional married woman. It might be thought that with the growing freedom of women in the country that matters with regard to the employment of married women could be left automatically to right themselves But that was not the case, because with the growth of that independence there was growing up a deliberate attempt to prevent the married woman from retaining her job Therefore it was necessary for the House to take the step contemplated in this Bill so as to secure that these repressive tendencies should be brought to an end Apart from the injury to the woman herself and her husband and family, through the action which they were seeking to get rid of, there was also an injury to the community If, for instance, a municipality had a regulation that no married woman could have a job either as a teacher or a medical officer that municipality and its ratepayers were to that extent deprived of a choice Many of these professional positions entailed a great deal of expense in preparing the individual for the work What an extraordinary waste it was if, because a woman married, the whole value to the community of those years of training was to be thrown away It might happen that a woman on marriage might not be suited or might be prevented by *maternal duties from carrying* out efficiently work which before her marriage she was able to do There was nothing in the Bill which prevented a local authority from dismissing such a woman But they had examples in the medical and other professions which showed quite clearly that many married women and mothers were capable of carrying out efficiently their work, and work quite as arduous as any which the Bill sought to deal with

Mr **Remer**, in moving the rejection of the Bill, said that they must realise the facts There were positions in the public service which it would be utterly impossible for a married woman to undertake There was the possibility of child birth to be taken into consideration, and that must involve long absence from work, and might probably make it impossible for the woman to continue in her employment He also appealed for the rejection of the Bill on the ground of economy If the Bill passed a Government department or municipal authority would either have to pay the woman during the period that she was unable to carry out her work, or if at the time of childbirth she was dismissed there would be much odium on the State or on the municipal authority for carrying out a very distasteful duty The fewer examples they had of legislation of this kind the better it would be for the House of Commons

Captain **Bourne** in seconding the motion for rejection, said that presumably the public bodies who objected to employ married women had good reasons for *their* attitude One reason was because experience had shown that in normal cases a woman was not as efficient a few years after marriage as she was before He did not think that anybody would contend that a woman during the period of pregnancy or immediately afterwards—a period which covered many months—was as efficient as she was under normal conditions Nor was the woman who was looking after a number of small children as efficient *as one* who was not The sexes were not equal in all respects, and no legislation would get over that provision of nature

Sir H **Slesser** said that he objected to interference in contractual relations between employers and employed, but here they were dealing with authorities who were receiving money either from Parliament or out of the local rates There was a distinction between a public body and a private employer, and he believed that it was the intention of the Legislature in passing previous legislation that men and women should be employed or not solely on the grounds of their value to the State, and it was irrelevant to take into consideration the mere fact that they had or had not been married This Bill was a progress in the direction of individual liberty, and for that reason he supported it with great enthusiasm

Viscountess **Astor** said that when she listened to the opponents of the Bill she felt that she knew women who could have twins every year and still be more efficient than some Members of Parliament She hoped very much that

Fatal Accidents in Factories

MR HERBERT WILLIAMS asked the Home Secretary the average fatal accident-rate per 1000 employed reported under the Factory and Workshops Acts during the four years 1922–25 and, for comparison, the corresponding figure for the four years 1910–13 —Sir WILLIAM JOYNSON-HICKS replied · I am afraid I cannot give my hon. friend precise figures, as there are no complete statistics available of the number of persons employed within the scope of the Factory and Workshop Acts in the years mentioned. On the best estimate I can make the fatal accident-rate per 1000 employed was 0 18 per annum for the period 1910–13, and 0 14 per annum for 1922–25 The former figure relates to Great Britain and Ireland the latter to Great Britain only

White Lead Paint Regulations and Ships

MR. RHYS DAVIES asked the Home Secretary whether he had received from the Shipbuilding Federation protests against the regulations governing the use of white lead in paint, what were the objections of the Federation to the regulations, and what steps if any, he proposed to take to see that the regulations should apply equally to the painting of buildings and ships —Sir WILLIAM JOYNSON-HICKS replied · The Shipbuilding Employers' Federation have objected to the application of the draft regulations to the painting of buildings in shipbuilding establishments on the ground that the persons employed in such painting are only occasionally so employed. The painting of ships is not in question, as the Act of last session only applies to the painting of buildings

Secretaries to School Medical Officers

DR VERNON DAVIES asked the President of the Board of Education if the appointment of the 15 secretaries to the school medical officers by the Lancashire education authority had led to any increase in the number of children examined at each session compared with the number examined previous to these appointments, and, if so, what was the increase — Lord EUSTACE PERCY replied If my hon friend will refer to the previous replies which I have given on this subject, he will see that the primary object of the arrangement adopted by the Lancashire authority is not to enable a larger number of children to be examined by the medical officers at each session, but to expedite the necessary clerical work connected with the school medical service I understand, however, that, in fact, the number of children examined per session has increased by about 33 per cent. during the last few years, and that, in the opinion of the authority, if the clerical work were undertaken by the school nurses, the number of children dealt with by the existing medical staff would be reduced.

Imported Machine-skimmed Milk

Lieut -Colonel ACLAND-TROYTE asked the Minister of Health whether he was aware that machine-skimmed condensed milk which was unfit for consumption by infants was being imported in increasing quantities; and whether, if investigations showed that this milk was injurious to invalids and healthy people, he would take steps to prohibit its importation.—Mr CHAMBERLAIN replied I am aware of the increase in the imports of machine-skimmed condensed milk. The absence of milk-fat renders this article unsuitable for infants, but I am advised that its constituents so far from being injurious, are of high nutritional value for ordinary food purposes and I see no sufficient reason for prohibiting its importation.

MONDAY, MAY 2ND

Specialist Officers in India

MR WARDLAW-MILNE asked the Under Secretary of State for India if he was now in a position to publish the full list of miscellaneous and specialist officers in India whose posts it had been decided to treat as superior —Earl WINTERTON replied Certain names have been added to the list already sent to my hon. friend, and it is expected that a further number will be added A premature decision to close the list would result in injustice to officers whose claims have not been disposed of As all the officers whose posts it is decided to treat as superior will be so informed by the Government under which they serve, I do not consider publication in the ordinary sense is required.

Navy, Army, and Air Force Insurance Fund

SIR BERTRAM FALLE asked the Minister of Health if he would consider an amendment to the National Health Insurance Act 1924, so that the period of six months, or in particular cases 12 months, for readmission to the Navy, Army, and Air Force Insurance Fund from date of discharge from His Majesty's Forces should not include any period when a would-be applicant was suffering from mental ill-health, seeing that in a recent case a man regarded himself as perfectly healthy, mentally and physically, yet before another six months had expired he was certified as a lunatic and his child was not eligible for benefit —Mr. CHAMBERLAIN replied The time within which a man discharged from service in the forces may apply for readmission to the Navy, Army, and Air Force Insurance Fund is governed by regulations under Section 59 (1) (*e*) of the National Health Insurance Act, 1924, and legislation would not be required to make the change suggested Although I am not at present satisfied that any hardship arises under the regulation in its present form, I will carefully consider whether any modification in the direction suggested by my hon friend is desirable

Blind Persons in London and Provincial Cities

MR HAYES asked the Minister of Health whether he could give the number of blind persons whose ages were between 50 and 70 years registered in the cities of Liverpool, Manchester, Birmingham, and London respectively.—Mr CHAMBERLAIN replied. The latest figures at present available are those at March 31st, 1925, and are as follows: Liverpool, 476, Manchester, 402; Birmingham, 375; and London, 1346

The Services.

THE HEALTH OF THE NAVY IN 1924

THE statistical report on the health of the Navy for 1924 has just been issued The number of men employed was rather less than in 1923 The amount of illness slightly increased, and the number of deaths rose from 184 to 271 Invaliding fell from 1433 to 1272. There were 65 cases of enteric fever on board the *Royal Sovereign* due to eating lettuce brought on board against orders at Madeira. The figure for pulmonary tuberculosis rose slightly, and there were more invalidings and deaths The incidence of this disease was again highest among telegraphists, the largest increase of cases was among seamen. There were no cases among the sick berth staff Venereal diseases greatly decreased, there were 800 fewer primary cases, and 20,000 fewer days of treatment.

BRITISH GARRISON IN HONG-KONG.

The British Red Cross Society is taking steps to form a branch of the society in Hong-Kong for the benefit of the British troops in the colony. A supply of comforts has already been sent, and a substantial sum has been placed to the credit of the Governor of Hong-Kong for the purchase of such additional hospital comforts as may be required The Army Council have welcomed these efforts on behalf of all ranks of the Garrison, and have expressed their cordial thanks for the prompt and energetic action which the Society has taken.

ROYAL NAVAL MEDICAL SERVICE

Surg Lt -Comdrs H L P Peregrine and J. C Sinclair to be Surg -Comdrs

ROYAL ARMY MEDICAL CORPS

Capt R L Ritchie to be Maj

J. W Malcolm late R.A.M.C (Spec Res) to be temp Capt

ARMY RESERVE OF OFFICERS

Col. H. W Grattan, late R A.M.C, having attained the age limit of liability to recall, ceases to belong to the Res. of Off

Lt.-Cols H. S Anderson and L. F F Winslow, having attained the age limit of liability to recall, cease to belong to the Res of Off

TERRITORIAL ARMY

Lt -Cols. (Bt. Cols) T B Wolstenholme J H. Hunter, and J W Kemp, from R A.M C, T A., to be Cols

TERRITORIAL ARMY RESERVE OF OFFICERS

Capt. C G Irwin, from the Active List, to be Capt.

Lt. A. G Ogilvie, from the Active List, to be Lt

ROYAL AIR FORCE

The undermentioned relinquish their temporary commissions on ceasing to be employed: Flight Lt (hon. Squadron Leader) H B Smith and Flight Lt. A E Jenkins

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MILITARY NURSING —It is officially announced that Queen Alexandra's Imperial Military Nursing Service and Queen Alexandra's Military Nursing Service for India have been amalgamated as from Nov 1st, 1926 The normal tour of duty in India for members of the amalgamated service below the rank of principal matron will be five years under an anæsthetic he agreed that it would be a very useful animal to operate on. The late Sir Frederick Treves[1] said:—

> "Many years ago I carried out on the Continent sundry operations upon the intestines of dogs, but such are the differences between the human and the canine bowel that, when I came to operate upon men, I found that I was much hampered by my new experience, that I had everything to unlearn, that my experiments have done little but unfit me to deal with the human intestine."

The Royal Commission did not report in favour of the exemption of dogs, but that exemption was only lost by a very small majority. When the question was before the Commission Sir William Osler said: "I think we have all felt that it would be very much better if we could get animals other than the dog to operate on." He quoted with approval the opinion of Dr. Cushing to the effect that

> "There is naturally a feeling of regret in the minds of many—of none greater than our own—that animals, particularly dogs, should be subjected to operations even though the object be a most desirable one and accomplished without the inflicting of pain, and did expense permit we would gladly have used animals with which there is an association of less acute sentiment on the part of all."

In some of the letters which had appeared in the press doubt had been expressed whether under the safeguards which were imposed animals actually suffered pain in consequence of these experiments. He did not think that any member of the medical profession would dispute that in many cases very great suffering was involved to the animal. It was clear from the report of the Commission, and from the evidence given by the Home Office expert, that there was a great deal of pain and suffering in certain cases. He would like to quote the opinion of Dr. George Wilson, medical officer of health for Warwick, and a member of the Royal Commission on Vivisection, and President of the State Medicine Section of the British Medical Association. The statement was from his presidential address to the British Medical Association at Portsmouth in 1898:—

> "I boldly say that there should be some pause in these ruthless lines of experimentation. I have not allied myself to the anti-vivisectionists, but I accuse my profession of misleading the public as to the cruelties and horrors which are perpetrated on animal life. When it is stated that the actual pain involved in these experiments is commonly of the most trivial description, there is a suppression of the truth, of the most palpable kind, which can only be accounted for by ignorance of the actual facts. I admit that in the mere operation of injecting a virus, whether cultivated or not, there may be little or no pain, but the cruelty does not lie in the operation itself which is permitted to be performed without anæsthetics, but in the after effects. Whether so-called toxins are injected under the skin into the peritoneum, into the cranium, under the dura mater, into the pleural cavity, into the veins, eyes or other organs—and all these methods are ruthlessly practised—there is long drawn out agony. The animal so innocently operated on may have to live days, weeks or months, with no anæsthetic to assuage its sufferings, and nothing but death to relieve."

He would also quote the opinion of Dr. Fielding-Ould, who was a medical man upon whose word the greatest authority and weight could be placed. He said:—

> "Consider a case of 'brain surgery' in which after removal of part of the brain the animal is allowed to regain consciousness and subsequently to drag out weeks of a painful convalescence. It is apposite also to mention cases in bacteriological work, to which no reference is made by Sir Charles Ballance. Often it happens that in the interests of research an emulsion of a virulent germ is injected into the abdominal cavity of a living animal (without an anæsthetic) and the creature is left to develop the disease with all the agonising accompaniments of peritonitis."

That letter was written by Dr. Fielding-Ould on March 30th of this year. He had also a large number of extracts from THE LANCET, the *British Medical Journal*, and other journals, giving particulars of operations and experiments which had been performed during the last year or so, and which showed beyond any question that these unfortunate animals which were experimented upon did suffer great agony and misery. He appreciated the fact that it was too late in the afternoon for him to get a second reading of the Bill that day, but he hoped that it might be possible to get the Bill passed some time during the session.

Lieut.-Colonel **MOORE**, in seconding the motion for the second reading, said he must disassociate himself from any views expressed by antivivisectionists. He was not an antivivisectionist. He was ready to accept the view that vivisection was necessary for the protection and extension of human life, but what he was not satisfied about was that dogs as such were necessary for these experiments, and that the vivisection of dogs would actually result in the saving or extension of human life. It was as a dog lover that he was addressing the House, and in taking this action he was confident that he was representing a growing body of opinion outside the House which regarded with horror the vivisection of dogs, and looked upon it as a blot upon the highly developed civilisation of the twentieth century. The chief argument used by vivisectionists in favour of the practice was that experiments on animals, including dogs, were justified and necessary in order to ascertain the probable effects of such experiments on human beings, and so save suffering and prolong human life. Were that contention proved to his satisfaction he would not have another word to say on behalf of this Bill. But had it been proved? Prof. Lawson Tait, Fellow of the Royal College of Surgeons, said: "The fact is that diseases of animals are so different from those of men that the conclusions of vivisectionists are absolutely useless."

Lieut.-Colonel **FREMANTLE**: In what year did he say that?

Lieut.-Colonel **MOORE**: I cannot say off-hand.

Lieut.-Colonel **FREMANTLE**: Twenty-five years ago.

Lieut.-Colonel **MOORE** said that he submitted that a learned gentleman's statement did not alter with the passage of time, more especially in the medical profession. Doctors, he assumed, had certain permanent professional beliefs. In confirmation of that statement he would take a few of the diseases for the cure of which vivisection experiments were being carried on. In the last 20 years the death-rate from cancer had increased by 46 per cent. In the same period the death-rate from diabetes had increased by 55 per cent., and the death-rate from thyroid diseases had increased by 85 per cent. These were diseases which vivisection was intended to relieve and cure. Let him take, on the other hand, diseases the cure of which largely depended on open air and more hygienic conditions of life. They found the enteric death-rate in 20 years had gone down by 80 per cent., measles 60 per cent., and scarlet fever 77 per cent. These were startling figures. Though he was not prepared to accept these figures as conclusive proof that vivisection was useless, he suggested that they called for very serious consideration, and at any rate provided an adequate case for the exemption of dogs from vivisection.

Lieut.-Colonel **FREMANTLE** moved the rejection of the Bill. He said that it was impossible to state the case against the measure in the quarter of a minute which remained, but he wished to say that they could meet the arguments put forward that day and would be glad to do so at any other time. If any antivivisectionists or people in favour of the Bill wished to have a meeting in that House or anywhere else, they would be glad to meet them on even terms, and they would beat them every time.

Sir **RICHARD LUCE** rose to speak, but it being 4 o'clock the debate stood adjourned.

HOUSE OF COMMONS.

WEDNESDAY, APRIL 27TH

Passage Concessions to Indian Medical Officers

Mr. **PETHICK-LAWRENCE** asked the Under Secretary of State for India whether a decision had now been reached as to granting passage concessions to Indian officers who entered the Indian Medical Service by competitive examination in London.—Earl **WINTERTON** replied: My noble friend has decided that all officers of the Indian Medical Service, including those of Asiatic domicile, shall be required before promotion to the rank of major to complete the senior officers' course at the Royal Army Medical College, Millbank. Attendance at this course will count as duty and carry with it free passages to and from the United Kingdom. Officers of the Indian Medical Service of Asiatic domicile will immediately after completing this course be regarded as eligible for a period of study leave, during which they will retain a lien on their free return passage to India. Those officers of Asiatic domicile now on service, who by reason of their age are disqualified from attending the senior officers' course, will be eligible once during their service for a free passage to England and back when proceeding on study leave. The Government of India have, however, not found it possible to give full effect to the scheme in the present financial year.

THURSDAY, APRIL 28TH

Pensioners and Final Awards

Sir **WALTER DE FRECE** asked the Minister of Pensions the number of applications for increase of pensions by men suffering from admitted war disabilities who did not appeal against their respective final awards within the statutory period, but whose condition had now become admittedly worse; and how many such men were actually under treatment, although their pensions could not be increased.—Major **TRYON** replied: I have no record of the number of cases of the kind referred to, but according to all the information in my possession they are comparatively few. With regard to the latter part of the question, I would remind my hon. friend that in every case where, following a course of medical treatment and observation, it is found that a serious and permanent error was made in the final award, a further grant is made under special sanction.

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[1] Brit. Med. Jour., Nov. 5th, 1898.

mixed with many other oxidation products of glucose, some of which are toxic Thannhauser and Jenke treated cases of severe diabetes with the commercial product, and found that it cleared up the urine from sugar and acetone bodies, but its use could not be continued because of gastro-intestinal complications Pure glucosone, made by Fischer's method, does not appear to give rise to any bad effects beyond those immediately produced from an overdose, but this method of preparation is costly and complicated Only small quantities of the pure substance have been hitherto available, and for that reason the experiments recorded by Dr Hynd have been carried out on mice Rats and rabbits, however, show the same effects on administration of an overdose, and the symptoms are remarkably similar to those which follow an overdose of insulin

Hitherto there have been many attempts to find a substitute for insulin, but few have been directed to ascertaining what form of carbohydrate other than glycogen results from the action of insulin upon glucose If it can be established that glucosone is an important intermediate its importance is obvious

I am, Sir, yours faithfully,

P T HERRING

Physiology Department The University, St Andrews,
April 27th, 1927

CREAM IN INFANT FEEDING

To the Editor of THE LANCET

SIR,—Dr R C Jewesbury, in the concluding paragraph of his letter, asks for information on the point "whether fat is needed rather for its vitamin content than for its food value," and adds, "until we are better informed surely we must believe that it is of value from both these points of view" All the available evidence goes to show that fats, apart from their high caloric value, have no specific food value, such as carbohydrates, for instance, possess by virtue of their so-called "protein-sparing action," and that no advantage is derived from a high intake of fat On the contrary, the experimental work of Colonel R McCarrison [1] indicates that a high intake of fat may have an unfavourable effect on the function of the thyroid gland, unless it is corrected by a corresponding increased intake of iodine

I am, Sir, yours faithfully,

W CRAMER

Imperial Cancer Research Fund, Queen square, W C,
May 2nd, 1927

BROMSULPHALEIN

To the Editor of THE LANCET

SIR,—Dr Rosenthal's surprise at my results was no greater than my own disappointment He himself explains the reason that great difficulties existed in the manufacture of the dye, and Mr W. Martindale—the "local chemist"—prepared a substance differing in very slight degree from the original prepared by Dr E C White As there are, however, grave doubts as to whether this substance behaves in a similar way to White's preparation I am reinvestigating the whole matter with bromsulphalein kindly supplied to me gratuitously by Dr White and by Messrs Hynson, Westcott, and Dunning, of Baltimore If I have been led into erroneous conclusions I shall take the first opportunity of contradicting them, but at the present time I am keeping an open mind upon the subject In conclusion, I may add that I have been in communication with Dr White about the chemistry of these dyes, and his letter threw the first doubts upon the dye which I had used

I am, Sir, yours faithfully,

ERNEST BULMER, M D, M R C P

Birmingham, April 15th, 1927

THE PENALISATION OF THE TUBERCULOUS

To the Editor of THE LANCET

SIR,—Dr Varrier-Jones has misunderstood the purpose of my letter My meaning would, perhaps, have been clearer if my remarks had been entitled "The Penalisation of the Notified" I do not know anything about the gentleman who was refused a post in a sanatorium because he had been treated for tuberculosis, further than was to be gleaned from "M O's" letter in your issue of March 19th, but I gathered that he had been advised to be treated for this affection and had made a good recovery

It does not always follow that when a patient in the early and curable stage of the disease is advised to be treated in a sanatorium that this advice is taken; the patient concerned preferring to take the risk of getting better as best he may, and if this should happen, having avoided notification, or at least publicity, will suffer no disabilities, but will be regarded as an ordinary citizen To illustrate what I mean, I may say that some years ago my advice was asked as to what had better be done with a young police-constable who was suffering from hæmoptysis, who, by the way, had also tubercle bacilli in his sputum I replied that he should be sent to the sanatorium at once as no one was justified in risking this man's life because he might lose his job if he admitted that he was suffering from tuberculosis, but I pointed out that in my opinion there was no reason why he should not be reinstated if he made a good recovery, this course was followed and after an uneventful recovery taking five months, he was taken back into the force, having lost his tubercle bacilli, and has been doing duty ever since

My letter was in no way concerned with the well-known fact that many cases of chronic disease can be kept alive and working for many years if their surroundings are favourable, indeed, there are thousands of chronic cases of tuberculosis carrying on their ordinary avocations, suffering from tuberculosis often in complete ignorance as to the nature of the disease from which they are suffering A sanatorium should not, however, be concerned with these cases, but should spend its time in preventing the formation of persons chronically ill, but in order that this may happen it is necessary that the public should be well assured that no penalties shall follow when they elect to make a proper effort towards recovery instead of hiding the nature of their illness lest a worse fate befall them It is obvious that no question of continuing work during treatment will arise in such cases

I am, Sir, yours faithfully,

April 21st, 1927 ERADICATION

THE TITLE OF DOCTOR—By a judgment of Mr. Justice Middleton, osteopaths and manipulative surgeons in the province of Ontario are debarred from using the prefix "doctor" as an occupational designation Under the Ontario Medical Act the use of the term "doctor" is forbidden to all except registered physicians

NOTTINGHAM HOSPITAL—On Saturday last Princess Mary opened the new out-patients' department of Nottingham General Hospital and an extension of the Children's Hospital The ground floor of the out-patients' wing of the General Hospital includes four blocks of consulting rooms, dressing rooms, and examination rooms The upper floor consists of a complete nose, ear, and throat hospital with 40 beds, an operating theatre and other adjuncts, the basement contains a fully equipped department for radiography, ultra-violet ray and therapeutic treatment, and a complete orthopædic department, with a gymnasium The extension has cost close upon £100,000, of which Mr W G Player has given £50,000 The Children's Hospital has been so much enlarged and improved that it is virtually a new building, connected by a corridor with the original, which is eventually to become a nurses' home There are 78 beds in six wards, ample provision is made for open air treatment, and there are playgrounds on the [illegible] Player has given £10,000 towards the cost

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[1] Brit Med Jour, 192[illegible]

Correspondence.

"Audi alteram partem"

TESTS FOR DRUNKENNESS

To the Editor of THE LANCET

SIR,—Reverting to Sir William Willcox's letter in your issue of April 23rd, I had thought that our discussion at the Medico-Legal Society had disposed of the objection, faintly raised by someone, that there might be legal difficulty in carrying out Dr Southgate and Dr Carter's method But Sir William Willcox now writes in your columns, "there were definite legal objections to the application of the test by the prosecuting authority—for example, the taking of a sample of blood from an accused person who was unwilling might be technically regarded as a legal assault" To take a sample of blood, yes, if it meant making an incision to obtain it, but we were talking about a sample of urine, and the taking of that would not involve a trespass, and it would provide legal evidence The method proposed by Dr Southgate and Dr Carter was, I understand, to have a urinal in the cell, with its waste pipe running outside, from which the sample could be collected

I am, Sir, yours faithfully,
ERNEST E WILLIAMS.

Lake road, Wimbledon, S W, April 29th, 1927

THE TOXÆMIA OF ACUTE INTESTINAL OBSTRUCTION

To the Editor of THE LANCET

SIR,—It astonishes me that Mr B W Williams in his Hunterian Lecture on the above in your last issue should have omitted all reference to the very careful work performed by McQuarrie and Whipple on the cause of the Toxæmia of Acute Intestinal Obstruction McQuarrie and Whipple performed experiments which appeared to show that the toxæmia in question is due to the absorption of a toxic proteose from the obstructed gut, and they even injected proteose into the veins of normal dogs and produced all the signs and symptoms of a toxæmia comparable with those found in acute intestinal obstruction If an individual believes that A is equal to B, to substantiate his hypothesis, besides giving reason to believe that this is so, he must also display the error in the arguments of all those who have shown, or apparently have shown, that A is not equal to B Mr Williams believes the toxæmia of acute intestinal obstruction is due to absorption of toxin produced by the multiplication of the *B welchii* in the obstructed gut, that it is due to the absorption of toxic proteose he does not seem to have considered, and he does not show or state that the toxin in question is in fact a toxic proteose Moreover, he states his opinion in spite of allowing that "the characteristic toxæmia will develop when there is paralytic ileus, whatever the cause of the peritonitis, whether streptococcal, pneumococcal, or resulting from any organism, when *B welchii* is not present in the peritoneal infection"

That Mr Williams should not have referred to my work is less surprising, yet are my unorthodox views supported by argument and scientific inquiry I showed, as a reviewer of my work allowed, that McQuarrie and Whipple had not sufficiently considered the effect of the persistent vomiting, induced either by strangulation of the intestine or by the injection of certain proteoses into the blood stream of normal animals, on the individual But Mr Williams refers not at all to the reaction of the patient to an obstruction of his intestine He imputes the "fine fatty degeneration in the liver and heart muscle" to the *B welchii* toxin, he has not considered whether such changes may be produced by the persistent vomiting Yet there is reason to believe that persistent vomiting, even in the absence of intestinal obstruction, can cause such changes, indeed, in the pernicious vomiting of pregnancy we have such a picture The effect of the persistent and frequently recurring pain, the restlessness, sleeplessness, the straining and the persistent vomiting of all patients suffering from intestinal obstruction is absent from his drawing, he imputes all the changes to the absorption of a toxin In spite of that he has not shown the presence of the toxin in the blood in these cases, he has not even shown that such is absorbed and even admits that "the organism may be abundant in the large intestine without any clinical toxæmia", and he allows that in acute obstruction improvement usually follows rapidly on successful operative relief But if the toxins are in the blood and working their wicked will, operative interference should be far less effective than it is

That organisms, even pathogenic ones, are present in the obstructed gut we may well believe The offensiveness of the vomit is sufficient evidence That a filtrate of such vomit injected into mice should kill them, and that mice protected from such toxin by an antitoxin should survive, we may well believe But this does not show that such toxins are absorbed from the obstructed gut and give rise to all the toxæmic phenomena and the collapse of intestinal obstruction. The multiplication of these organisms in the obstructed gut is readily explained by the limitation of blood flow through, and the diminished activity of, the mucosa in the affected part So far from their being absorbed, there is reason to believe that such gut contents are not absorbed or not in normal amount or at normal rate Mr Williams seems to admit as much, referring to the sudden collapse which may occur unexpectedly after successful operation, he says this may be due to "the sudden flooding of the circulation with a lethal dose of toxin by the very act of relief of the strangulated intestine through restoration of the circulation to the damaged area permitting very rapid absorption of toxin, or possibly by rapid absorption of toxin by the normal mucous membrane distal to the obstruction after its relief" The katabolic processes in the body, which in intestinal obstruction are occurring at speed, are forgotten or not considered, that man is an animal subject to fatigue—even in acute intestinal obstruction—is a phase of the question completely ignored —I am, Sir, yours faithfully,

R H PARAMORE, F R C S Eng

Rugby, May 2nd, 1927

GLUCOSONE A POSSIBLE SUBSTITUTE FOR INSULIN

To the Editor of THE LANCET

SIR,—A paper[1] communicated to the *Royal Society* recently by Dr Hynd from this department may turn out to be of considerable importance Dr Hynd has ascertained that glucosone or aldofructose, one of the oxidation products of glucose or fructose, produces when injected subcutaneously in mice a condition which is very similar to that produced by the injection of insulin Similar oxidation products of maltose and lactose—i e, maltosone and lactosone—are inactive, but on hydrolysis become active Dr Hynd suggests that glucosone is the intermediate in carbohydrate metabolism which is normally formed, and that some at least of the symptoms produced by insulin are due to the production of glucosone in excess The symptoms are modified by adrenalin and pituitrin as are those due to insulin

If Dr Hynd's views are correct it is possible that glucosone might be used in place of insulin, particularly as it can be taken by mouth Preparations made commercially were used in Germany by Thannhauser and Jenke, but they were prepared by the hydrogen peroxide method which gives a product

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[1] The Action of Glucosone on Normal Animals (Mice) and its Possible Significance in Metabolism By A Hynd Proc of the Royal Society, B, 1927, ci, 244

Obituary.

ERNEST HENRY STARLING C.M.G., M.D., F.R.C.P. LOND., F.R.S.,

FOULERTON RESEARCH PROFESSOR OF THE ROYAL SOCIETY

WE deeply regret to announce the death which occurred this week in Jamaica of Prof. Ernest Henry Starling, the distinguished physiologist, whose name is a household word in medicine in all countries of the world. He died on board the *Ariguaing* as the ship was nearing Kingston, the voyage having been taken for the benefit of his health, which had been indifferent for some time, although he did not allow this fact to interfere with the strenuous routine of the winter session. He had worked with characteristic intensity until very shortly before his departure, and it was hoped and believed that a few weeks' rest on board ship in a warmer climate, which he loved so much, would restore him, as it had done on previous occasions, to his customary vigour.

PROF. E. H. STARLING

Ernest Starling was the eldest son of a barrister who practised in Bombay and wrote a work on Indian legal procedure. He was educated at King's College School and, completing his medical course at Guy's Hospital, graduated in medicine at the University of London in 1888, after a brilliant career as a student, being exhibitioner and gold medallist at the University in physiology and chemistry, and University scholar in forensic medicine, while he also won the gold medal in botany of the Apothecaries Society. He was further helped substantially by the Grocers' Scholarship and a scholarship from the British Medical Association. He proceeded to the M.D. degree in 1890 when he qualified for the University gold medal, and having continued his studies at Heidelberg under Kühne resolved to pursue physiology as a career. He held certain house appointments but became demonstrator of physiology at Guy's Hospital in 1889 and joint lecturer in the subject in the following year, and for the next nine years he lectured on physiology in the medical school at Guy's, and also at the School of Medicine for Women. During this period he found time to study under Heidenhain in Breslau.

Starling's early career was much influenced by Leonard Wooldridge, who, returning to London from a visit to Ludwig at Leipzic, was fired with the newest and best ideals of experimental physiology; Starling worked with Wooldridge, and on the latter's early death was appointed to succeed him at Guy's, and was thus launched as a physiologist. The teaching of Heidenhain brought early fruit, for it was in consequence of this association that Starling took up the study of lymph formation to which he made important contributions, largely by the application of recently discovered data in the realm of physical chemistry. Starling taught physiology, and virtually created as well as ran the department of the subject at Guy's Hospital, from 1889 until he left Guy's to succeed Prof. Sharpey-Schäfer as Jodrell Professor at University College, London, in 1899.

At University College his achievements were of the highest, and his work for it and for the University of London was untiring, both single-handed and in association with his brother-in-law, William Bayliss. Always a high idealist he did everything to promote scientific work, not only in physiology but in many other departments of scientific activity, as is illustrated by the fact that he became a member of the governing body of the Lister Institute from the outset and at his death had served thus for 20 years. At University College he planned and constructed the Institute of Physiology—a remarkable feat—and he also conceived the general scheme of the present block of medical science laboratories with their own central library, which was subsequently made possible by the bequest from the Rockefeller Foundation.

A summary of Starling's scientific work must be attempted, though its far-reaching and prolonged nature must make such a notice imperfect. His earliest published work was on electric currents in the mammalian heart and was written in collaboration with Bayliss in 1891, with whom in 1892 he also wrote on the parts of the heart affected by the sympathetic and accelerator nerves. In 1893 came a paper based on work done in Heidenhain's laboratory on the action of lymphagogues. He continued this work on lymph formation at Guy's, and during the next two years obtained results on which most of our present knowledge of capillary permeability and lymph and œdema formation depends. These researches introduced the fundamentally new idea that the rate of transudation was a function of the colloidal osmotic pressure on the one hand and the hydrostatic pressure on the other. This was followed by a series of papers on the action of lymphagogues and on the absorption of fluids from tissue spaces and serous cavities; this work led naturally to his investigations in 1899 of the glomerular functions of the kidney, in which he was led to the determination of the colloidal osmotic pressure of the blood-serum. This work synchronised with his election to the Royal Society. Much of his work between the years 1891–1905 was done in collaboration with Bayliss. This included their joint work on the innervation and movements of the intestines, and the mechanism of the secretion of pancreatic juice, which included the discovery of secretin in 1902, and which opened up new avenues of investigation which are still being explored. The next phase was the exact analysis of the action of asphyxia, especially on the circulation; this began about 1909 and ultimately led to the perfection of the heart-lung circulation preparation with which a great deal of his subsequent work was done. This preparation enabled the experimenter to control the mechanical conditions of the heart to an extent which had not previously been possible. and the research which was carried out by Starling and numerous professors, which is still in progress, led to the laboratories at University College becoming the focus for the work. It involves not only a detailed investigation of the mechanical conditions of the heart beat, but also is extended to include investigations of the coronary circulation and of the mechanism by which the rate and output of the heart is subjected to control.

THE IRISH FREE STATE MEDICAL REGISTER BILL

(FROM OUR OWN CORRESPONDENT)

THE text of the Free State Medical Register Bill, which was introduced to the Dail by President Cosgrave last week, was published on Monday last It provides for the confirmation of an agreement made between the British Government, the Government of the Irish Free State, and the Government of Northern Ireland, on the subject of medical registration and for the establishment of a Medical Council and a Medical Register for the Irish Free State

The agreement, which is signed by Earl Balfour, Mr McGilligan, and Sir Dawson Bates, on behalf of the respective Governments, provides that the powers and functions of the General Council in regard to Ireland, and the powers formerly vested in certain universities and corporations in Ireland, shall be deemed not to have been affected by the establishment of the Irish Free State or of Northern Ireland The nomination of members of the General Council by the several universities and corporations in Ireland shall be made as heretofore, as shall the election of a direct representative by registered practitioners in Ireland The nomination of a member for Ireland, formerly made by His Majesty, shall in future be made by His Majesty on the recommendation of the Government of Northern Ireland It is further provided that any person who is or shall be registered in the General Register shall be entitled, on payment of a fee prescribed by the Free State Parliament, to be registered in the Free State Register, no fee shall be payable by any person who, being on the General Register at the date of establishment of the Free State Register, applies for registration therein in the prescribed time and manner Apart from the agreement with Great Britain, the Bill sets out the constitution, powers, and duties of a Medical Council to be established in the Free State The Council is to consist of nine members—namely, one nominated by the Executive Council, one each by the following bodies University College, Cork, University College, Galway, University College, Dublin, the University of Dublin, the Apothecaries' Hall, one nominated jointly by the Royal College of Surgeons and the Royal College of Physicians, and two, who shall be registered medical practitioners, elected by the registered medical practitioners resident in the Free State The Council will have, as its chief duty, to establish and maintain a Medical Register Persons entitled to be registered on the Register, on its establishment, and without the payment of a fee, will be —

(*a*) Every person already registered in the General Medical Register and resident in the Free State, and (*b*) every person resident outside the Free State and already registered in the General Medical Register who applies to the Free State Council within one month after the establishment of the Register

After the establishment of the Register, the following persons, on making the prescribed application and paying the prescribed fee, shall be entitled to be registered in it —

(*a*) Every person who at the time of application is registered in the General Medical Register, and (*b*) every person who at the time of application possessed one or more of the qualifying diplomas mentioned in the third schedule to the Bill—viz, L.R C P I, L R C S I, Licentiate of the Apothecaries' Hall, Dublin, M D, Dublin University, M B, B Ch, Dublin University, Licentiate in Medicine and Licentiate in Surgery, Dublin University, M D N U I, M B, B.Ch N U I

On and after the establishment of the Free State Register no practitioner shall be entitled to recover in any legal proceedings any fees on account of medical or surgical attendance by him unless he was registered in the home Register at the date on which such attendance was given

Similarly, appointments which are to be held by "qualified medical practitioners" or "registered medical practitioners," will only be tenable in the Free State by persons on the Free State Register

The Bill gives the Council the same powers as regards education and discipline as are at present possessed by the General Council Any persons aggrieved however, by an adverse decision of the Council, will have the right of appeal to the High Court, the judgment of which shall be final, and not subject to appeal to any other Court

The necessary expenses of the Council for the first year are to be borne by public funds, and subsequently out of the Council's own monies

Up to the present there has been little time for comment on the Bill It seems to be clear that there is no interference with the privileges and rights of Irish graduates and licentiates to registration on the General Register, and therefore, on the main point the fears and anxieties of the Irish medical profession at the time when it was announced that a change would be made can now be allayed It has to be admitted, however, that the medical profession paid hardly enough attention to the question of the constitution of the Free State Medical Council, and no discussion took place at any time between the representatives of the profession and the Government on the subject The result is a singular confusion of procedure The Bill departs from the principle of constitution of the General Council, by which each licensing body, whether university or corporation was entitled to one member It seems to adopt the principle of assigning one member to each school instead of to each licensing authority, but even this is thrown over, for one corporation which has no relation to a school is given a member. The result is neither logical nor possessed of practical merits The principle underlying the constitution appears to be sound and not to be inconsiderately abandoned The Council has to deal with the licensing body, rather than with the teaching body directly It is for the body that grants the diploma to satisfy itself of the adequacy of the teaching which prepares for the diploma The General Council has frequently inspected examinations, but has never thought it its duty to inspect teaching In this respect the present Bill follows the same principle, for it gives power to the Medical Council to inspect examinations but none to inspect teaching There seems to be no justification for the bringing of teaching institutions as such into direct relation with the Council On the other hand, the grouping together of the two Royal Colleges for the nomination of one member seems an unnecessary economy Probably a majority of practitioners in the Free State at present are on the Register by virtue of the possession of the diplomas of these bodies Moreover, they are the only purely professional corporations in the Free State concerned with the qualification of medical practitioners, if one excepts the Apothecaries' Hall, the other licensing bodies being non-professional, such as the universities It is undesirable that the lay element should have a supreme control in matters of medical education On the Free State Medical Council as proposed in the Bill, five members out of nine will be appointed by lay authorities

The right of appeal to the High Court is interesting, but is not likely to give rise to much opposition

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ROYAL NATIONAL ORTHOPÆDIC HOSPITAL —At the annual Court of Governors, Mr H E West, the deputy chairman, said that the worst legacy the hospital had ever inherited was its cumbersome and little understood name, and that it would continue to be hampered by it "unless someone invented a good slang one" It was reported that the work at the country branch at Stanmore had exceeded expectations, and that £78,000 had been raised towards the £115,000 needed for extension there There was an increase during the past year of more than 4000 in the number of out-patient attendances The weekly cost of an in-patient at Stanmore is £1 13*s* 9*d*, about 14*s* per week less than in London

Collingridge volunteered for service as surgeon with the Serbian forces In spite of his youth he was given responsible work in the organisation of hospitals and at the end of the campaign received the Order of Takova from King Milan After his return to England he qualified as M R C.S Eng in 1877 from St Bartholomew's Hospital. and graduated both in law and medicine at Cambridge later being called to the Bar as a member of Gray's Inn Two years of private practice followed after which in 1880 he was appointed medical officer of health for the Port of London. During the 20 years he held this office there was great advance in the practice of port sanitation and Collingridge's part in the development of London's protective health service was a large one His work was both responsible and difficult and was the more conspicuous because during two continental epidemics of cholera he had to devise measures for guarding against the spread of the disease to this country. Problems of this kind interested him greatly, and he chose Quarantine as the subject of his Milroy Lectures,[1] delivered in 1897 before the Royal College of Physicians, in which he made an effective attack both upon the theoretical basis and practical application of the measure It was not one, he said, that could usefully be enforced by a commercial country; it was expensive it led to a false sense of security and it involved serious danger to health from the detention of vessels in conditions that were often insanitary and kept people within range of infection. Sanitation and a rational system of medical inspection must prove more efficacious and less burdensome Dr. Collingridge also showed himself a warm advocate of better conditions of life for the mercantile marine and a good deal of the work which is gradually leading to their improvement has been done by men who became familiar with the work which won praise for his department In 1901 he was transferred to the post of medical officer of health for the City of London in succession to Dr. Sedgwick Saunders, and here also before his retirement in 1913. he was successful in his work for the public health Not all his schemes were carried through without opposition, and at times he had to face a great deal of criticism, especially in regard to his crusade against the unclean conditions in which the oyster was bred and distributed for the London market. He did the same service for the cockle—the poor man's oyster as he called it

Outside his official duties Dr. Collingridge was a keen soldier. At Cambridge he joined the University Rifle Corps, and on coming to London he was for ten years a member of the Honourable Artillery Company His later service included seven years with the Volunteer Medical Staff Corps and eight years as officer commanding the Militia Medical Staff Corps Throughout the late war he was in charge of Auxiliary Military Hospital 112, in Kent He lived for a long time in this county but later moved to Berkshire where he became a justice of the peace The end of his life was spent at Pennington, in Hampshire

Dr Collingridge was a Knight of Grace of the Order of St John of Jerusalem He married a daughter of Captain Thomsett C M G R.N

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[1] THE LANCET, 1897, i, 715, 787 and 863

POST-GRADUATE COURSES AT BERLIN—A series of international post-graduate medical courses will be held at Berlin from Sept 15th to Oct 31st under the auspices of the Kaiserin Friedrich Haus and with assistance from the medical faculty of the University The medium of instruction will be German but a number of lecturers speak English and other languages Information about accommodation expense of maintenance and facilities for attending at clinics and hospitals may be had from the office of the Kaiserin Friedrich-Haus 2-4 Luisenplatz, Berlin N W 6 The office is willing to send particulars of German post-graduate instruction besides the short courses held between the above dates

Medical News.

ROYAL COLLEGE OF PHYSICIANS OF LONDON—An ordinary Comitia of the College was held on April 28th, the President, Sir John Rose Bradford being in the chair. The following candidates, having satisfied the Censors' Board, were elected as members —

Drs Eric Harold John Berry, Sohan Lal Bhatia, George Frederick Buchan Arthur Burrows, Robert Greenhill Cochrane, Elizabeth Mary Cowie, Edward Charles Dodds, Alfred Claude Mitchell Elman, John Bell Ferguson, Frederick James Theodore Foenander, Ian Wolfe Gallant, Dorothy Gibson, Arthur Cecil Hampson, Alan Trevor Jones, Georges Klionsky, Allan Dunstan Lamphee, Joseph Tegart Lewis, Frederic Ernest Loewy, John Allison Macfadyen, Eugene McLaughlin, Peter Henry Martin, Peter Milligan Henry Seaward Morley Cyril Thomas Piper, Alice Campbell Rose, Leonard Victor Snowman, Saravanamuttu Somasundram, Thomas Harold Thomas, and Neil Thorburn Melrose Wigg

The following were elected to the Fellowship on the nomination of the Council —

Drs William Smith Paget-Tomlinson, George Hall Donald Elms Core, Henry Pratt Newsholme, Arnold Walmsley Stott, Georg Herman Monrad-Krohn (Christiania), Thomas Henry Gostwyck Shore, Vivian Bartley Green-Armytage, Reginald St George Smallridge Bond, Maurice Davidson, Thomas Izod Bennett, Edward Mapother, Charles Frederick Terrence East, and Hugh Maclean

Nominated by Council under By-law XXXVII (*b*). Dr Andrew Balfour and Sir Squire Sprigge

The Registrar moved for the first time the following temporary by-laws, both of which were passed —

1 That Georg Herman Monrad-Krohn, being resident in Norway, be admitted to the Fellowship *in absentia*, any by-law to the contrary notwithstanding

2 That Vivian Bartley Green-Armytage being resident in India, be admitted to the Fellowship *in absentia*, any by-law to the contrary notwithstanding

Licences to practise were conferred upon 164 candidates (135 men and 29 women) who have passed the Final Examination in medicine, surgery, and midwifery of the Conjoint Board and have complied with the by-laws of the College. The following are the names and medical schools of the successful candidates —

V. H Addison, St Bart 's, B W Alexander, Cambridge and St Bart.'s, Sophia A P Allen, Charing Cross, R. G. Apthorpe, Cambridge and St. Thomas's; H E C Aslett, St Mary's H Aziz Manchester, J D Bailey St. George's; W. B Ballenden, Birmingham. G H Barendt, Cambridge and St. Bart.'s, J F. L Barnes, Cambridge and St Thomas's C. J Bashall St. Thomas's, A. Batty, Madras and Middlesex, H Bell, Cambridge and St. Thomas's, T. G Benjamin, Guy's, C. P J Bester, Cape and St. Thomas's · H O Blauvelt, Dalhousie and Univ. Coll.; Dorothy Bolton, Charing Cross, E J. Boschi, Cambridge and Leeds, W. J. Branday Birmingham, I G. Briggs, Birmingham and London, C. F. Brockington Cambridge and Guy's · R. Bruce, Leeds; E Burton and W A. Busby, London, E N Butler, Oxford and King's Coll; G D G. Cameron, Cambridge and Leeds · Emily E Cass, Royal Free and St Mary's; K. B Chakravarti, London; A. D. Charters Cambridge and St Thomas's · R. L Cheverton, Birmingham, E T Clifton Guy's; Mary C E Constantine, Royal Free, C B Crofts, St. Mary's; W V Cruden St Bart.'s; A. R. Culley, Cardiff, R. Cunningham and S F L Dahne, Cambridge and St. Bart's, B G Dain, Cambridge and Birmingham, B B Dalal Univ. Coll, S D Dalal Middlesex K E D Dauncey, Cambridge and King's Coll, C S Davies, St Bart.'s, T G. Davies, Cardiff and St. Bart.'s, L F Day, St Bart's, R. S. deBruyn Cape and Guy's S J. de Navasquez, Guy's · C H Dhala, London · Elsie M Douglas, Univ Coll · Grace C Evans, Royal Free, R V. Farr, Birmingham · Isabella Forshall Royal Free, K M. Foster, Birmingham · G H Froggatt, Sheffield, J Furman, Durham, A. A H Fyzee, Bombay and Univ Coll H S Gaussen, Guy's; F. W Gayford and H C Geldard Middlesex H Girling, Cambridge and Guy's, V A Goldman, Birmingham; J M Graham Cambridge and London, Marion L Grimmer, Westminster L C. Gunasekara King's Coll, A L Gunn, Cardiff, Vivienne M Gunson King's Coll. A K Gupta, Calcutta and London V C J Harris Cambridge and Manchester W R E Harrison, St Bart's J A Hartley, Cambridge and St Thomas's, A H B. Heesom, Guy's · Kathleen Heyes Royal Free C A N Hicks Guy's F R How St Thomas's W Hyman Leeds, R F Isaac Cardiff, Anna H Jackson, Royal Free; M I Jackson and Amy L Jagger, Cardiff L R Janes Cambridge and St Bart 's Margaret E Jones St Mary's; W P Jones Cambridge and Univ Coll W B R Jones Cardiff and St Thomas's J Joseph Cape and Middlesex; R Kahn Cape and London, R W Kenney Dalhousie and London S M Kharegat Bombay and St Bart.'s N A King Cape and St Bart's, R A. King, St Mary's · H J. Krichefski Univ Coll A H Lankester Cambridge and St Thomas's, P G Levick, Cambridge and St.

During the last few years he was employing the heart-lung circulation as a means of investigating the mystery of urinary secretion

Starling's practical work was admirably illustrated in his literary activities, books, lectures, and addresses His first book, the "Elements of Human Physiology," was recognised at once to form a compact and all-round exposition of the main facts and theories of the science as then accepted, it formed a safe guide for the student and a good foundation for all on which to raise a superstructure of the knowledge obtainable from the study of more elaborate text-books, and, as edition followed edition, the results of general or special research were duly incorporated A "Primer on Physiology" followed in 1904, in which a small volume, priced at 1s, actually conveyed to the reader the broad features of the functions by which life is maintained The message that a knowledge of fundamental facts in physics and chemistry must be possessed before the complex processes carried on in the living body can be rightly observed or recognised as being manifestations of the laws of nature, was the text of all Starling's written work, and those who read the "Primer" in the early stage of their medical curriculum will remember how much it enabled them to follow with intelligence extended accounts of the physiological functions when placed before them in lectures The same method of argument was] followed in the Arris and Gale Lectures which he delivered before the Royal College of Surgeons of England in 1896, taking as his subject the physiological factors involved in the causation of dropsy In these lectures he sketched the working in the normal animal of the processes of lymph production and lymph absorption, and proceeded to examine in detail the causation of dropsy, thus expounding the reasons, chemical and physical, which lay behind the pathological manifestations, and dictated the course of treatment and the technique adopted

In 1897 Starling was elected a Fellow of the Royal College of Physicians of London, and in 1905 delivered the Croonian Lectures In these he described the chemical correlation of the functions of the body, and vindicated the assumption, which is the basis of scientific medical practice, that the activities of the body are coordinated among themselves by the production and circulation of chemical substances The descriptions of the classic investigations justifying the thesis were so clear that they must have formed for many medical men an introduction to far more strictly scientific views than they had previously held, or furnished them with the scientific reasons for the therapeutical procedures which they adopted In the fourth of these lectures, Starling discussed the influences of the generative organs on the body as a whole, and on its parts, describing the researches with which Dr Lane-Claypon was associated, and which introduced hormones to the general medical reader

Shortly after came the discovery of secretin by Bayliss and Starling, and in Starling's last public delivery will be found his estimate of the meaning of that work[1] The occasion was the first of the lectures delivered in connexion with the centenary celebrations of University College, London, in which Starling briefly reviewed a century of physiology, giving a masterly survey of the progress of the science from the time of Harvey to the third quarter of the nineteenth century, and then continued with a detailed summary of modern physiology In this he dwelt but briefly on his own work, although he made a significant observation, as showing the continuity of his science that he had returned to the questions which agitated Harvey, and which had been left by Harvey for future inquiry

The "Principles of Human Physiology" made its appearance in 1915 This was a substantial and illuminating exposition solid in substance and individual in its lines of the state of physiology, by one who had added so much to the science Several editions have followed, the latest appearing in 1925, and as the work now stands it incorporates the advances made during the five years of war, and constitutes a comprehensive and suggestive treatise, valuable alike to advanced students and to practitioners

During the war Starling saw much service For the first two years after the outbreak of hostilities he was engaged as a medical officer with the Forces holding the rank of Captain, and at Milbank, as Colonel, he was in charge of the anti-gas department In 1916 he was appointed Chemical Adviser to the Salonika Forces, for which services he was appointed C M G, and the close of hostilities found him, after intensive work, on the Royal Society's Committee on Food Supplies, Scientific Adviser to the Ministry of Food In this position he was able to bring his extraordinary knowledge into the practical service of his country He kept before the public the need of continued scientific and statistical information while our present knowledge of many of the most important aspects of nutrition was so inadequate In those critical times he explained the relations of food and health to public efficiency, and the public obtained from him just views on the quality and quantity of food necessary for the maintenance of health, and proper instruction as to national and individual food requirements In the Oliver-Sharpey Lectures, delivered before the Royal College of Physicians, he summarised much of this teaching in a study entitled The Feeding of Nations, and he was then speaking as the British Delegate to the Inter-allied Food Commission For all this important national work Starling received no adequate recognition from the State

In 1923 he put the essence of his philosophy into the Harveian Oration, which he delivered before the Royal College of Physicians, under the title of The Wisdom of the Body Here a dissertation on the physiological laws of the heart and the powers and limits of adaptation was followed by an eloquent explanation of the chemical integration of the body. He closed with an insistence on the injunction of Harvey, to search out and study the secrets of Nature by way of experiment, thus hoping to attain to a comprehension of "the wisdom of the body and the understanding of the heart, and the mastery of disease and pain"

Starling, who is among Harvey's greatest descendants, was one of the last general exponents of experimental physiology, and the position was granted to him by the scientific world He served for several periods on the Council of the Royal Society, was a medallist of the Society and Vice-President in 1918–19 He received honorary degrees from Cambridge, where he had acted as an examiner, from Breslau, Strasburg, Sheffield, and Dublin, and was also Herter Lecturer in New York He spread essential truth for 30 years and more, to the benefit of mankind

His widow, who survives him, was a daughter of the late Sir Edward Sieveking, and he leaves by her three sons and one daughter He was buried at Halfway Tree, three miles from Kingston, on May 3rd, in the presence of the Governor and medical staff of the island

WILLIAM COLLINGRIDGE, M D, LL M, D P H CAMB

THE death of Dr W Collingridge, on April 29th, closes an eventful life which has proved of considerable service to the public, and especially to the City and Port of London, where he was for many years medical officer of health

Born at Islington in 1854, William Collingridge, who was the eldest son of William Hill Collingridge, who founded and edited the *City Press* He was educated at Clewer House, Windsor, and in 1875 went on to Christ's College, Cambridge In June of the following year war broke out between Serbia and Turkey, and

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[1] THE LANCET, March 5th, 1927

Sir Berkeley Moynihan has been appointed a Deputy Lieutenant of the West Riding of the County of York

Irish Medical Association—The Council has nominated Dr H T Warnock, Donegal, to the Presidency of this Association and Mr P E Hayden, F R C S I to the Vice-Presidency Dr Warnock has been Vice-President for the past two years

Leigh Infirmary—Extensions of the Leigh Infirmary, Lancashire, and the new nurses' home were opened on April 30th The number of available beds will now be 70, and for the first time there will be a resident house surgeon

Yorkshire Refraction Hospital—The Lord Mayor of York, Alderman Oscar F Rowntree, has opened this hospital at Leeds, it is said to be only the second of its kind in the world It has been founded by the Yorkshire Optical Society, with the primary objects of training in hospital practice students taking up optical work and of providing spectacles for necessitous people Facilities are provided for extended practice in advanced refractive technique, with opportunities for clinical instruction and research, and there will be a voluntary staff

Shantung Christian University—Arrangements have been made for carrying on this University's work and that of the University Hospital now that the foreign staff has been compelled by consular order to withdraw from Tsinan The University is supported by 14 British, American, and Canadian societies and a Chinese executive committee has now been formed, including Dr P C Kiang (Associate Dean of the School of Medicine), who is a biochemist, and is hoping to begin research at Cambridge at the end of this year under Sir F G Hopkins The medical service of the hospital will be conducted by a group of Chinese doctors, graduates of the University School of Medicine The acting president of the University, Rev. J D MacRae, writes in warm terms of the helpful and friendly spirit which has been shown by all sections of the Chinese community

Far Eastern Association of Tropical Medicine The Government of India has invited the Far Eastern Association of Tropical Medicine to hold its seventh Congress in India in December next The Congress will open at Calcutta on Dec 5th, and scientific sessions will occupy the first week. The official delegates of the various countries will then visit other parts of India as guests of the Government The Congress and tour will end on Dec 22nd These dates are provisional Particulars of the Congress may be had from the General Organising Secretary, Lieut.-Colonel J Cunningham, I M S, Pasteur Institute, Kasauli, Punjab, British India.

Royal Institution—The annual meeting of the members of this institution was held on May 2nd, Sir Arthur Keith, treasurer and vice-president in the chair, when the annual report of the Committee of Visitors for 1926 was read and adopted The report of the Davy Faraday Research Laboratory Committee was also read, 64 new members were elected in 1926, and 78 lectures and 19 evening discourses were delivered The books and pamphlets presented amounted to about 229 volumes, making, with the 569 volumes purchased, a total of 798 volumes added to the library in the year The officers elected unanimously for the ensuing year were . President, the Duke of Northumberland, Treasurer, Sir Arthur Keith, Secretary, Sir Robert Robertson The Managers include Sir James Crichton-Browne, Dr J Mitchell Bruce, and Sir Almroth Wright

Care of Mental Defectives—Speaking at the post-graduate week of the College of Nursing, held at Manchester from April 25th to 30th, Dr W G Thomson deputy superintendent of the Cheadle Royal Asylum raised the question how far the liberties of mental defectives ought to be restricted Realising that in the majority of cases no cure but only an amelioration of the condition was possible, it remained to consider how this might be effected Much depended on the social and economic position of the parents The vast majority of defectives could not be cared for within the family circle At present the difficulty was that accommodation was insufficient for all the cases requiring treatment Even if this was surmounted there was always the argument that force must not be used, that the law must not be invoked to separate the kind parents from a member of the family who was the object possibly, of more affection than the normal children It did not appear wise to be too sentimental and such cases were more often happy in institutions than they were at home At institutions they received specialised attention and were kindly and humanely treated The real question at issue was whether the good of the child was to be subordinated to the liberty of the parents As to the problem of propagation he thought segregation was the remedy that appealed to most people

Medical Diary.

SOCIETIES.

ROYAL SOCIETY, Burlington House, Piccadilly, W

THURSDAY, May 12th—4 30 P M, Discussion Meeting on the Function and Distribution of Living Organisms of Hæmoglobin and Related Substances *Speakers* Prof J Barcroft Dr H Hartridge, Sir Frederick Hopkins, Dr D Keilin, Mr F J W Roughton, Mr R Hill, Prof H M Fox, and Dr J B S Haldane Demonstrations will be given from 4 to 4 30 and from 6 to 6 30 P.M

ROYAL INSTITUTION, 21, Albemarle street, W

FRIDAY, May 13th—9 P.M, Concerning Old Age Sir Humphry Rolleston

ROYAL SOCIETY OF MEDICINE, 1, Wimpole street, W

TUESDAY, May 10th—5 P.M, THERAPEUTICS AND PHARMACOLOGY Annual General Meeting Election of Officers and Council Paper Sir William Willcox, Dr. F A Pickworth and Dr Helen Young The Clinical and Pathological Effects of Hypnotic Drugs of the Barbituric and Sulphonal Groups 5 30 P.M, PSYCHIATRY Annual General Meeting Election of Officers and Council

WEDNESDAY—5 P M, SURGERY SUBSECTION OF PROCTOLOGY Annual General Meeting Election of Officers and Council Discussion on Colostomy Openers Mr W Ernest Miles and Mr W B Gabriel The discussion will be continued by Sir James Berry, Sir Charles Gordon-Watson, Mr R. P Rowlands, Mr Norbury, and others There will be a demonstration of colostomy belts of different patterns

THURSDAY—6 P M NEUROLOGY. Annual General Meeting Election of Officers and Council

FRIDAY—5 30 P M, CLINICAL. (Cases at 5 P M) Annual General Meeting Election of Officers and Council Cases Mr P Turner (1) Case of Fractured Patella Wired in 1889 (2) Gumma of the Liver Dr C F T East Case of Facial Hemiatrophy with Diaphragmatic Tic Mr E G Slesinger Arteriovenous Aneurysm with Bullet Retained in Heart Muscle Dr Burrell Case of Lymphadenoma Mr Lambrinudi Case for Diagnosis Dr Parsons Smith Transposition of Viscera with Cardiac Complications Dr Krestin (1) Aneurysmal Swelling of Neck with Spontaneous Disappearance, (2) Dextrocardia without Complete Visceral Transposition and with Acquired Heart Disease Mr St J D Buxton Case of Exophthalmos cured by Carotid Ligation Cases will also be shown by Dr Worster-Drought, Mr W E Tanner, and Mr L R Broster 8 30 P M, OPHTHALMOLOGY (Cases at 8 P M) Papers Dr Freeland Fergus (1) Some Facts of Peripheral Vision (2) Mr Percival Pott on the Treatment of Lachrymal Fistula Dr J Hamilton McIlroy The Art of a Super oculist

SATURDAY AND SUNDAY—BALNEOLOGY AND CLIMATOLOGY Annual Provincial Meeting at Llandrindod Wells

BIOCHEMICAL SOCIETY

SATURDAY, May 7th—3 P M (in the Physiology Dept the University, Oxford-road, Manchester) Communications Kathleen Culhane and S W F Underhill Variations in the Serum Calcium of Rabbits F C Happold The Attempted Isolation of a Type Precipitinogen from *B ærtrycke* Mutton P W Clutterbuck Experiments on the Origin of Succinic Acid in Muscle and Liver C E M Pugh and H S Raper The Action of Tyrosinase on Phenols E Boyland and A D Ritchie (introduced by H S Raper) Chemical Changes in Muscle J Pryde and J M Peterson The Carbohydrate phosphate Component of Animal Nucleic Acid J Pryde and E T Waters Some Observations on Methylated Glycerophosphates T K Walker and P D Coppock (introduced by H S Raper) Fermentation of Propionic Acid by Aspergillus niger Ellen Stedman and E Stedman Hæmocyanin Part IV The Dependence of the Shape of the Oxygen Dissociation Curve on the State of Ionisation of the Protein

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION 1, Wimpole street, W

MONDAY, May 9th, to SATURDAY, May 14th FELLOWSHIP OF MEDICINE Mr Sidney Boyd will give a demonstration at the Hampstead General Hospital on Wed 2 P.M On the same day at 12 noon, Mr Greeves will demonstrate at the Royal London Ophthalmic *Hospital* On Thurs Sir Thomas Horder will give a demonstration at St Bartholomew's Hospital at 1 30 P M These demonstrations are free to members of the medical profession—ALL SAINTS' HOSPITAL, Vauxhall Bridge road, S W Afternoons and evenings demonstrations, including cystoscopies and lectures—LONDON SCHOOL OF TROPICAL MEDICINE Endsleigh Gardens, N W Tues, Dr Manson-Bahr, Thurs, Dr Low Lecture-demonstrations—ROYAL FREE HOSPITAL, Gray's Inn road, W C Wed, 5 P M, demonstration by Prof McIlroy, 5 15 P M, Lecture demonstration by Dr Heald—ROYAL WATERLOO HOSPITAL, Waterloo road S E Comprehensive course in medicine, surgery and gynæcology—CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL, Gray's Inn road, W C Intensive course including operative classes LONDON LOCK HOSPITAL Dean street, W Clinical Course and *formal*

Bart 's, O I Lewis, London, S C Lewsen, Guy's, Margaret I Little, St Mary's, L G Llewellyn, Guy's and Middlesex, P V MacGarry, Dublin and London, Annie M McGrath, Westminster, H Mallinson, Cambridge and St George s, Nancy S Marshall, Royal Free and St Mary's, T W Masters, Birmingham, S P Meadows, Liverpool, Gwendolen E M Meyer, Charing Cross, F J Milward, Cambridge and St Thomas's, J K Moore, Cambridge and Guy's, Barbara E M Morris St Mary's, F B Mulvany, London, J H Mulvany, King's Coll, Sybille L Myers, Royal Free, K G Nerurkar, Bombay and Guy's, C G M Nicol, Charing Cross, M G Nimatallah, Cairo and London, Jessie G A Norman, Charing Cross, T St M Norris, Cambridge and London, R E Norrish, St Bart 's, M D Nosworthy, Cambridge and St Thomas's Audrey S Nunn, Charing Cross, A B Nutt, Sheffield, D E Oakley, Cambridge and St Bart 's, R Oddie, St Thomas's, C E Ogden, Toronto and St Bart 's, R L Osmaston, Cambridge and Univ Coll, B N Pajnigar, Bombay and London, Maud Palmer and Marjorie E Parfitt, Royal Free, Florence M Parsons, Charing Cross, G E B Payne, Univ Coll, E A Pye, Cambridge and St George's A Rabinowitz, Guy's, M Ragheb, Cairo and Middlesex, Marjorie M Readman, Leeds, D V Rice, London, R I Richards Cardiff and St Bart 's, W H Roberts and S Rodker, St George's, S F Russell, St Bart 's, J C Saldanha, Univ Coll, S W Savage, Cambridge and Univ Coll W H Scott-Easton Cambridge and Westminster, W H Scriven, Cambridge and King's Coll, S Shalaby, Cairo and London, N H Skelton Browne, Guy's, L A P Slinger, Cambridge and St Bart 's, F C Smith, London, H M S Stanley, Cardiff, J F Stent, Cambridge and St Thomas's, Florence V Stephen, Manchester, T C Stevenson, Cambridge and St Thomas's, G R S Stewart, Cambridge and Guy's, B M Sundaravadanan, Madras and Guy's, A G S Tabb, Charing Cross, W H Tandy, Birmingham, W E Underwood, Cambridge and St Bart 's, C W Walker, Cambridge and St. Thomas's, J Wasserstein, London, C F Watts, Cambridge and St Bart 's, Maeve Whelen, Royal Free, G D D Wijesekere, Middlesex, D A J Williams and M G Williams, Cardiff, H M Willoughby, St Bart 's, C G Windsor, Cambridge and St Thomas's, Elsie B Wright, Royal Free, M Yankelovitch, Middlesex, and Margaret I Yeatman, Charing Cross

Dr Fawcett was re-elected a representative of the College on the Senate of the University of London —The death of the late Junior Standing Counsel to the College, Mr Dighton Pollock, was announced The President nominated Mr C Stafford Crossman, of Lincoln's Inn —The President announced that he had nominated, pending confirmation by the College, Dr C O Hawthorne, on behalf of the College, to serve on a Departmental Committee appointed by the Ministry of Health to consider a draft Bill prepared by the Joint Committee of Qualified Opticians to provide for the registration of optical practitioners and to regulate the practice of sight testing The nomination was confirmed —The Registrar reported that the President attended the reception of delegates to the Lister Centenary Celebration by the Prime Minister, at the British Medical Association's house on April 5th, as the representative of the College, and presented an address, and that the President, censors, and all the other College officers, with the exception of the treasurer who was out of England, attended the service at Westminster Abbey on the morning of April 6th —Dr H Morley Fletcher, the senior censor, was appointed a delegate to represent the College at the celebration of the centenary of University College, London, on June 23rd, 1927 —Dr R D Rudolf was appointed a delegate to represent the College at the celebration of the centenary of the granting of the Charter of King's College, Toronto, to be held on Oct 6th 1927, and two following days at Toronto —Dr S W. Wheaton was appointed a delegate to represent the College at the Third Imperial Social Hygiene Congress, to be held at the Caxton Hall, Westminster, from Oct 3rd to Oct 7th, 1927 —Dr C H Bond was appointed a delegate to represent the College at the commemoration of the centenary of the death of Pinel and the birth of Vulpian, to be held in Paris on May 30th and 31st, 1927 —A report was received from the committee appointed to make suitable arrangements for the celebration of the Harvey Tercentenary in 1928 It was decided that the celebration should have both a social and a scientific character The committee was empowered to proceed with these arrangements —The books and other donations presented to the library during the last quarter were received and the thanks of the College returned to the donors Special mention was made of a gift of six or seven very valuable books from Dr Herbert Spencer

After some further formal business, the President dissolved the Comitia

WEST KENT MEDICO-CHIRURGICAL SOCIETY —A meeting of this Society will be held at the Miller General Hospital, Greenwich on Friday, May 13th, at 8 15 P M, when Dr H Nockolds will deliver a presidential address entitled the Poor-law Hospital and its Relation to General Practice

UNIVERSITY OF LONDON —At recent examinations the following candidates were successful —

DIPLOMA IN PSYCHOLOGICAL MEDICINE.

With Special Knowledge of Psychiatry —Isaac Atkin G C Berg, Arthur Darlington, Florence M Gamble, P L Goitein, J F Williams

With Special Knowledge of Mental Deficiency —George Brown Mary V Littlejohn, Walter Wyatt

Medical Scholarships of the University of London Six medical entrance scholarships and exhibitions of an aggregate total value of £513, tenable at University College and in the medical schools of University College Hospital the London Hospital, and the London (R F H) School of Medicine for Women, are being offered The examination will begin on June 28th, and full particulars may be had from the Secretary of the Board, Mr S C Ranner, at the Medical School, King s College Hospital, Denmark Hill, London, S E 5

London Hospital Medical College (University of London) The Schorstein Memorial Lecture will be delivered by Prof Knud Faber, of the University of Copenhagen, on Thursday, May 19th, at 4 15 P M, in the anatomical theatre of the College The subject will be Gastritis its Relation to Achylia and Ulcer Members of the profession are invited to attend

London Hospital Dental School —A special lecture on Recent Medical and Dental Research on Accessory Food *Factors in Relation to Diseases of the Teeth will be given by* Dr J Sim Wallace on Monday, May 9th, at 5 P M in the anatomical theatre Members of the medical and dental profession are invited to attend

UNIVERSITY OF MANCHESTER —Dr J Webster Bride has been appointed lecturer, Dr K V Bailey assistant lecturer, and Dr J W A Hunter demonstrator in obstetrics and gynæcology Mr E E Hughes and Mr A H Southam have been appointed lecturers in operative surgery

UNIVERSITY OF BIRMINGHAM —The Ingleby Lectures will be delivered on May 11th and 18th, at 4 P.M, in the Medical Lecture Theatre (Edmund street Buildings), by Dr George F Still, on Place in Family as a Factor in Disease in Childhood Members of the medical profession are invited to attend

NATIONAL HOSPITAL FOR DISEASES OF THE HEART The "St Cyres" Lecture will be delivered by Dr J Strickland Goodall at this hospital on Tuesday, May 31st, at 5 P M The subject will be Some General Aspects of Myocarditis Tickets of admission from the Secretary at the hospital

The practice of the National Hospital for Diseases of the Heart is now open to students who have completed four years of medical study, and short courses of instruction in cardiology will be held immediately preceding the final examinations Particulars may be had from the Secretary

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION —On Wednesday, May 11th, Mr Sidney Boyd will give a special demonstration in surgery at the Hampstead General Hospital, and on the same date, at 12 noon, Mr Greeves will demonstrate at the Royal London Ophthalmic Hospital On Thursday, May 12th, at 1 30 P M, Sir Thomas Horder will give a demonstration at St Bartholomew's Hospital All members of the medical profession are invited to attend, without fee, these demonstrations arranged by the Fellowship Courses already in progress include one in urology at the All Saints' Hospital, one in psychological medicine at the Maudsley Hospital, and one in venereal diseases at the London Lock Hospital, whilst on Wednesdays a series of lecture-demonstrations on antenatal diagnosis and treatment is being given at the Royal Free Hospital by Prof Louise McIlroy The Central London Throat, Nose and Ear Hospital will hold an intensive course from May 9th to 28th, consisting of clinical and operative instruction The entry is limited, and early application is desirable The National Hospital, Queen-square, will give a course from May 9th to July 15th, consisting of clinical lectures and demonstrations, teaching in the out-patient department, besides a course in neurological anatomy and physiology, and one in methods of examination From May 16th to 28th the Infants Hospital will hold a course in diseases of infants, and the Hampstead General Hospital a course, especially for general practitioners (1 30 to 6 P M) in medicine, surgery, and the specialties The Fellowship can arrange practical courses in obstetrics and anæsthetics, and also make arrangements for clinical assistantships in gynæcology A general course of instruction is provided at the hospitals associated with the Fellowship Copies of all syllabuses and of the *Post Graduate Medical Journal* are obtainable from the Secretary of the Fellowship at 1, Wimpole-street, London, W 1

An Address

ON

FAILURES OF PROSTATECTOMY.

Delivered before the Manchester Surgical Society on March 22nd, 1927,

By Sir JOHN THOMSON-WALKER, M B Edin,
F.R C S Eng.,
SENIOR UROLOGIST AND LECTURER ON UROLOGY, KING'S COLLEGE HOSPITAL, SURGEON TO ST PETER'S HOSPITAL FOR STONE AND OTHER URINARY DISEASES

We have left behind the phase of prostatectomy where the mere fact of recovery from the operation is looked upon as a sufficient vindication of the skill and foresight of the surgeon, where the sole measure of success is the tally of the patients who leave the home or hospital alive That is, of course, the first criterion as to whether the operation is worth doing or not But having achieved a mortality figure that is low[1] considering the age of the patients operated upon (67 2 years), and the fact that the operation affects a vital organ and is a severe operation, we must be prepared to go a step further and inquire into the quality of the success which has followed the recovery from the operation

A patient who is left with a suprapubic fistula following the removal of a simple enlarged prostate is in a very much worse plight than if he had refused operation and resorted to catheter life A patient whose prostatectomy wound has healed but who has great difficulty in passing water and has to be relieved by catheter or must submit to repeated dilatations of the urethra is no better off for the operation He is, in fact, worse off for catheterisation before his operation was probably a simple matter, whereas after the operation it is extremely difficult A patient with a previously sterile urine who since his operation has suffered from cystitis, recurrent attacks of pyelitis, or of epididymitis, cannot be said to have improved his comfort or increased his prospect of life by having his prostate removed

These and some other types I should classify as failures of the operation of prostatectomy It is, I think, worth while considering how these failures come about and how they may be prevented or remedied, and this will be the subject of my remarks.

The causes of these failures may be reduced to two fundamental factors—namely, sepsis and obstruction

Sepsis. A Cause of Failure

I am afraid that there still lingers in the mind of many surgeons the idea that a urinary case is necessarily a septic case Sepsis in relation to enlarged prostate and prostatectomy is a failure of surgical methods and one that, I regret to say, appears to be widely accepted as inevitable.

I cannot agree with this view It is possible to catheterise a patient or to manage a catheter retained in the urethra over a long period and keep the urine aseptic It is possible to have the urine absolutely clear when the wound has closed after a prostatectomy I do not say that it is easy to produce this result; it is not But it is possible with extreme care in detail to achieve it in a large number of cases There are, of course, degrees in sepsis When I started urinary work every bladder wound in hospital was encrusted with phosphates, and the skin surrounding the wound inflamed and ulcerated by the alkaline decomposing urine This condition is not seen at the present day, but the urine in prostatectomy is almost invariably infected, and septic complications are very frequent The commoner septic complications are cystitis, epididymitis, seminal vesiculitis, pyelitis, and pyelonephritis

Infection may occur before the patient suffering from enlargement of the prostate comes to the surgeon, it may be introduced at the time of the operation, or it may occur subsequent to the operation when the cystotomy wound is still open. The number of cases of enlarged prostate that come to me with the bladder infected by the catheter is much smaller than it was 10 or 15 years ago, and is steadily diminishing, but they still amount to 44 per cent of private cases and 53 per cent of hospital cases

If the infection is moderate, and there is no evidence of pyelonephritis, a few weeks' preparation by thorough bladder-washing, either with intermittent catheterisation or with the retained catheter, together with diuresis and urinary antiseptics, will suffice as preparation for the operation Where a more severe grade of sepsis is present it will be necessary to perform suprapubic cystotomy and drain the bladder The immediate effect of cystotomy is a depression of the renal function and a consequent rise in the blood-urea If the patient recovers from this the question of removing the prostate will arise at a varying interval This is prostatectomy in two stages It is not possible to discuss the two-stage operation fully here, and I shall only deal with it in relation to sepsis

In all cases of severe urinary sepsis that do not clear up rapidly with bladder-washing, or appear unsuitable for this method, I drain the bladder by cystotomy for the treatment of the infection before performing prostatectomy The indwelling catheter provides insufficient drainage for a severe grade of cystitis A self-retaining catheter in the suprapubic wound is also inadequate, and a tube of sufficient size to allow of free escape of mucus and pus must be used Continuous irrigation through a catheter in the urethra and the suprapubic tube is the most effective method of treatment after the cystotomy

The number of cases in which this is necessary is small at the present day In 820 cases of prostatectomy performed up to the end of 1923, I performed a two-stage operation in 63, or 7 6 per cent In the last 200 private cases there have only been 5 in which the operation was a two-stage prostatectomy, and in all of these the cystotomy was done for severe sepsis In judging when these infected cases are fit for prostatectomy the urine and the general state of the patient may be sufficient But where the infection has spread to the kidneys and has not completely cleared up, it is desirable to obtain further information

The urea-concentration and blood-urea tests give information in regard to the renal function, and it may be assumed where these tests are satisfactory and the infection is moderate in degree that the prognosis for prostatectomy is good Where a severe grade of sepsis is present, the question of resistance of the patient to the infection is an additional factor in prognosis Recently MacAdam and Shiskin[2] have investigated the value of the cholesterol content of the blood as a measure of the resistance to infection possessed by the individual.

Cholesterol plays an undefined part in the process of immunity, stimulating, it is believed, the production of antibodies Immunisation processes have been shown to be accompanied by a high cholesterol content of the blood, a low "blood cholesterol" in a case of acute or chronic retention due to prostatic enlargement is significant of a low capacity for antibody formation, and points to the case being a bad operative risk as regards prostatectomy. The combination of a high blood-urea and a low cholesterol content is very serious Certain factors unconnected with renal suppuration, such as arterio-sclerosis, glycosuria, and malignant disease, produce a high blood cholesterol, and to some degree modify the value of this test

The normal average cholesterol content of the blood is 0 161 per cent Below 0 130 per cent is lectures daily —Maudsley Hospital, Denmark Hill, S E Special course in Psychological Medicine Further information from the Secretary

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[1] The mortality in 156 consecutive private cases was 4 4 per cent The causes of death in 7 cases was pulmonary embolism 3 cases, acidosis 1 cerebral hæmorrhage four weeks after operation 1, diabetic coma 1, cerebral degeneration and circulatory failure 32 days after operation, 1

[2] Brit Jour Surg, January, 1925, p 435

WEST LONDON HOSPITAL POST GRADUATE COLLEGE, Hammersmith, W

Monday, May 9th —10 A M, Mr MacDonald Genito Urinary Operations 2 P M, Dr Ironside Medical Out-patients 5 P M, Staff Consultation

Tuesday —10 A M, Medical Registrar Ward Demonstration 2 P M, Mr Addison Operations 2 P M, Mr Sinclair Surgical Out patients

Wednesday —10 A M, Dr Owen Medical Diseases of Children 12 15 P M, Dr Burnford Medical Pathology 2 P M, Dr Scott-Pinchin Medical Out patients

Thursday —10 A M, Dr Grainger Stewart Neurological Department 2 P M Mr Donald Armour Operations 2 P M Mr Bishop Harman Eye Department

Friday —10 A M Dr Dowling Skin Department 11 A M, Dr Pritchard Modern Methods in Medicine 2 P M, Mr Vlasto Throat, Nose and Ear Department

Saturday —9 30 A M, Dr Burnford Bacterial Therapy and Ward Visit 10 A M, Dr Owen Medical Diseases of Children

Operations, Medical, Surgical and Special Out-patients daily, 10 A M, to 5 P M, Saturdays, 10 A M to 1 P M

NORTH-EAST LONDON POST GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham N

Monday, May 9th —2 P M, Medical Cases in the Wards 2 30 P M to 5 P M, Medical, Surgical and Gynæcological Clinics Operations

Tuesday —2 30 P M to 5 P M, Medical, Surgical, Throat, Nose, and Ear Clinics Operations

Wednesday —2 30 P M to 5 P M, Medical, Skin, and Eye Clinics Operations

Thursday —11 30 A M, Dental Clinic 2 30 P.M to 5 P M, Medical, Surgical, and Ear, Nose and Throat Clinics Operations

Friday —10 30 A M, Throat, Nose, and Ear Clinics 2 30 P.M to 5 P M, Surgical, Medical and Children's Diseases Clinics Operations 4 30 P M, Special Demonstration on Selected Cases of Nerve Diseases by Dr L R Yealland

KING'S COLLEGE, Strand, W C

Tuesday, May 10th —5 P M, Prof R J S McDowall Autonomic Nervous System. (Second of four free lectures)

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, Hunter street, W C

Monday May 16th —5 30 P M, Prof H Beckwith Whitehouse The Menstrual Function (First of three free lectures)

INSTITUTE OF PATHOLOGY AND RESEARCH, St Mary's Hospital W

Thursday, May 12th —5 P M, Dr R A O'Brien Streptococci their Toxins and Antitoxins

ROYAL NORTHERN HOSPITAL, Holloway road, N

Tuesday, May 10th —3 15 P M, Mr J B Hunter Ulcer of the Stomach

LONDON SCHOOL OF DERMATOLOGY, St John's Hospital, 49, Leicester square, W C

Tuesday, May 10th —5 P M, Dr Wilfrid Fox Seborrhœic Affections

Thursday —5 P M, Dr Graham Little Lichen Planus

MANCHESTER ROYAL INFIRMARY POST GRADUATE COURSE

Tuesday, May 10th —4 15 P M, Dr A H Holmes —Pericarditis

Friday, 4 15 P M, Dr W Dyson Demonstration of Skin Cases

Appointments.

Wheatley, Elizabeth, M B, Ch B, Glasg, D P H Edin, has been appointed Assistant Medical Officer of Health for Burnley.

Manchester Royal Infirmary **Scotson, F H**, F.R C S Eng, Resident Surgical Officer, **Keddie, J. T C** M B, Ch B Manch, House Surgeon to the Special Departments, **Prentice, Miss M I**, M B, Ch B Manch, Clinical Assistant, Medical Out patient Department **Stephen, F. V.**, M B, Ch B, Clinical Assistant Surgical Out-patient Department.

Certifying Surgeons under the Factory and Workshop Acts, **Smith, K V**, L R C P Lond, M R C S (Rocester, Stafford) **Jackson R H**, L R C P Lond, M R C S (Bakewell) **Quanbrough, F K B**, L R C P Lond, M R C S (Tideswell, Derby)

Vacancies.

For further information refer to the advertisement columns

Barrow-in-Furness, North Londsdale Hospital —H S £130

Birmingham University —Asst Lecturer in Physiological Dept £300

Brighton, Royal Sussex County Hospital —H S £150 Also Cas H S £120

Carshalton Surrey Queen Mary's Hospital for Children —Senior Asst M O £650

City of London Maternity Hospital, City road, E C —Asst Res M O At rate of £80

Cyprus —Specialist in Venereal Diseases £700

Eastbourne, Princess Alice Memorial Hospital —Jun Res H S At rate of £100

Elizabeth Garrett Anderson Hospital, Euston-road —H P, Obstet. Asst, and two H S 's Each at rate of £50

Finsbury, Metropolitan Borough of —Asst M O H £600

Freemason's Hospital and Nursing Home, 237, Fulham road, Chelsea, S W —Res M O At rate of £250

Golden-square Throat, Nose, and Ear Hospital, Piccadilly-circus, W —H S £100

Grove Park Hospital Lee, S E —Jun Asst M O £500

Hampstead and North West London Hospital, Haverstock Hill, N W —Phys to Out patients

Hong Kong —M O H £750

Ilford Borough, Infant Welfare Centres —Asst M O £1 11s 6d per session

Infants Hospital, Vincent square, Westminster —H P At rate of £75

Liverpool, Highfield Sanatorium for Tuberculosis —Asst Res M O £350

London Jewish Hospital, Stepney Green, E —Res M O Also Jun Res M O At rate of £150 and £100 respectively

Miller General Hospital for South East London, Greenwich road, S E —Anæsthetist 52 guineas

Newark Hospital —Res H S £200

Norwich Norfolk and Norwich Hospital —H S £120

Queen's Hospital for Children, Hackney road, E —Cas O At rate of £100

Royal Free Hospital, Gray's Inn road, W C —Res Anæsthetist Also Hon Asst Radiologist

Royal Northern Hospital, Holloway N —H S At rate of £10

St Albans and Mid Herts Hospital and Dispensary —Res H S £150

St Bartholomew's Hospital —Asst Dental Surg

St John's Hospital, Lewisham, S.E —Phys to Skin Dept

St Paul's Hospital, Endell street Holborn, W C —Hon Radiologist

St Thomas's Hospital —Anæsthetist

Sheffield Royal Hospital —Res Anæsthetist At rate of £80

Stirling District Mental Hospital, Larbert —Second Asst M O £275

Walsall General Hospital —Jun H S At rate of £125

West London Hospital, Hammersmith road, W —Hon Med Radiologist Also Asst P

West End Hospital for Nervous Diseases Gloucester Gate, Regent's Park, N W —Sen H P and Jun H P At rate of £150 and £100 respectively

West Riding Mental Hospital, Menston, near Leeds —Jun Grade Asst M O £400

Western Ophthalmic Hospital, Marylebone road, N W —Hon Asst S

West London Hospital, Hammersmith road, W —Aural and Ophthalmic H S and Asst Res Cas O At rate of £100

Westminster Hospital, Broad Sanctuary, S W —Fourth Asst S and fourth Asst P

York County Hospital —H S £150

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Birtley (Durham), and at Hemsworth (Yorks, W Riding)

Births, Marriages, and Deaths.

BIRTHS.

Coope —On April 26th, the wife of G M Coope, M R.C.S, D P H, Queen's park, Manchester, of a daughter

Mann —On April 27th, at High West street, Dorchester, Dorset, the wife of E W Mann, of a son

Sneyd —On April 26th, at Harley street, the wife of George C Sneyd, F R C S I, of a daughter

MARRIAGES.

Carson—Honeywill —On April 20th, at St Barnabas, Addison road, Kensington, Dr Hugh Carson, of Selly Oak Hospital, Birmingham to Kathleen, youngest daughter of Mr William Honeywill, of 92, Oakwood Court Kensington (late of Adelaide South Australia)

Cole—Finlayson —On April 28th, at St Mary's Church, Chiddingfold, Surrey, Leslie Barrett Cole, M D, to Mary, younger daughter of Surg Captain H W Finlayson, D S O R N (retd)

Isbister—Henderson —On April 26th, at Edinburgh, Rollo Isbister, M B, Ch B, to Nita, youngest daughter of the late James Henderson, 31, Queen's crescent, Edinburgh

Perkins—Speedy —On April 30th, in Henry VII 's Chapel, Westminster Abbey, Alan Christopher Temple Perkins M C, M B B S, to Doris Macdonald Speedy, only daughter of Percy Speedy, Esq, A M I E E, of Lynton, Worcester Park, Surrey

Saward—Edwards —On April 28th, at the Parish Church, Ardingly, Sussex Arthur H M Saward, M R C S Eng, L R C P Lond, to Gavine elder daughter of the late Ernest William Edwards, Esq, of Heeleakah, Assam, and the late Mrs Gardiner, of The Old Court House, Richmond, Surrey

DEATHS

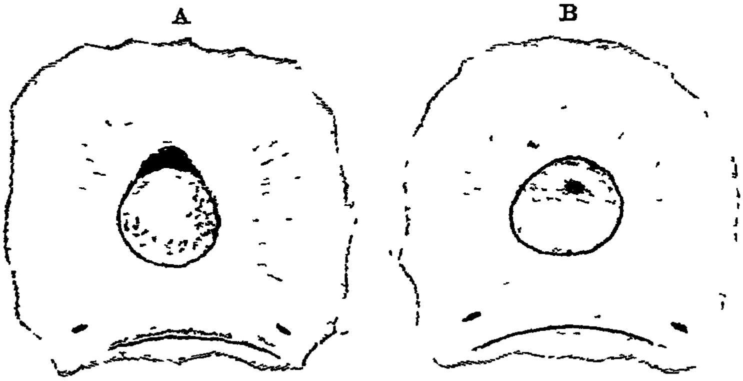
Batterbury —On May 2nd at Berkhamsted, Richard Legg Batterbury, M D, aged 83

Campbell —On April 23rd, at Shian, Woodcote road Wallington, suddenly, Patrick Edward Campbell, M B, C M Edin, in his 71st year

Smyth —On April 28th, at "Lota," Gerrards Cross, Bucks, William John Smyth, M D, late of Southport, aged 81

N.B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths silver nitrate solution The boric acid crystals re renewed every 12 hours If sepsis is already resent continuous irrigation is carried on by ttaching the tube of the reservoir to the catheter

FIG 2 —VARIETIES OF OBSTRUCTION AFTER PROSTATECTOMY



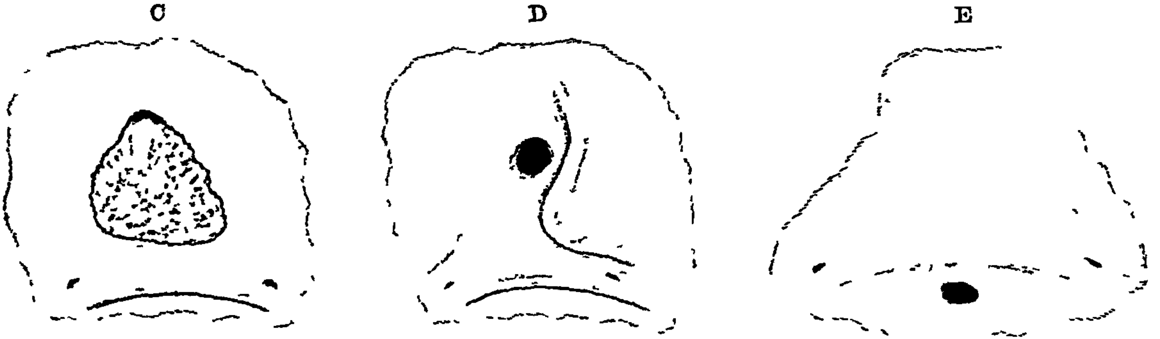
A = Nodule of prostatic tissue occluding internal meatus

B = Fibrous obstruction at lower part of prostatic bed

Epididymitis is the most frequent septic complicaion after prostatectomy, and the incidence of this omplication has been the subject of a number of rticles in the past ew years White[3] nvestigated 50 hospital cases and found the incidence was 82 per cent, and that in cases where there had been no previous infection the number amounted to 74 per cent, and in 33 per cent. the epididymitis was of a severe grade

As a remedy for post-prostatectomy epididymitis French surgeons have for some years performed bilateral vasectomy as a routine practice after removing the prostate gland and this has been adopted by some surgeons in this country I have no fundamental objection to the method of bilateral vasectomy after prostatectomy Many years ago I showed that the patient after prostatectomy is sexually sterile, although not impotent The section of the vasa is, therefore, a matter of no consequence so far as the procreative power is concerned But it appears to me to be a confession of failure on the part of the surgeon and, moreover, it is unnecessary

It is possible, by attention to detail in the prevention and treatment of sepsis in relation to prostatectomy, to avoid, with only rare exceptions, this complication In 140 consecutive private patients where my notes were sufficiently detailed as to leave no doubt as to the matter, there were 9 cases in which epididymitis was noted (6 4 per cent) In 5 of these cases the epididymitis was of a very mild grade amounting to local tenderness and slight thickening lasting a few days In 8 of the cases the urine had been infected before operation, and in one case there had been an attack of epididymitis before operation In 49 of the 140 cases the urine was infected before removal of the prostate, and no epididymitis followed the operation



C = Mass of granulation tissue occluding meatus

D = Contracted meatus with fold of mucous membrane

E = Complete occlusion of internal meatus with false opening behind trigone

In a very considerable proportion of my cases of prostatectomy, amounting to not less than 25 per cent, the urine was absolutely clear when the suprapubic wound healed up In the other cases, with a few exceptions, the urine was slightly cloudy, and in only a very few cases of pre-operation infection was the urine cloudy with a deposit of pus

Seminal vesiculitis is another septic complication of prostatectomy In cases of enlarged prostate, seriously infected before operation, it is one of the causes of persistence of urinary infection after drainage and energetic treatment of the sepsis has been carried out, or after the prostate has been removed In a few cases I have seen pus welling from the seminal vesical at the operation of prostatectomy, and I have laid the vesicle open into the bladder I have also found it necessary to remove the seminal vesicles in patients that have previously had the prostate removed, and suffer, after the operation, from persistent suppurative vesiculitis But this appears too serious an addition to the operation to carry it out at the time of the prostatectomy

OBSTRUCTION A CAUSE OF FAILURE

Obstruction after the operation of suprapubic prostatectomy for enlargement of the prostate varies from a slight difficulty in micturition to complete obstruction with suprapubic fistula

In 69 cases of severe obstruction following prostatectomy submitted to me for consultation, the conditions found were —

1 Fibrous contraction valvular folds or adenomatous nodules at the internal meatus or in the prostatic bed

2 New growth in the wall of the prostatic bed (*a*) Recurrence of simple enlargement of the prostate, (*b*) Malignant growth

I shall discuss these causes of obstruction

1 *Fibrous contraction at the seat of enucleation of the prostate*—In 1921 I published[4] 16 cases of obstruction due to the formation of the fibrous tissue in the area from which the prostate had been removed I have now seen 60 *cases of this condition* In all

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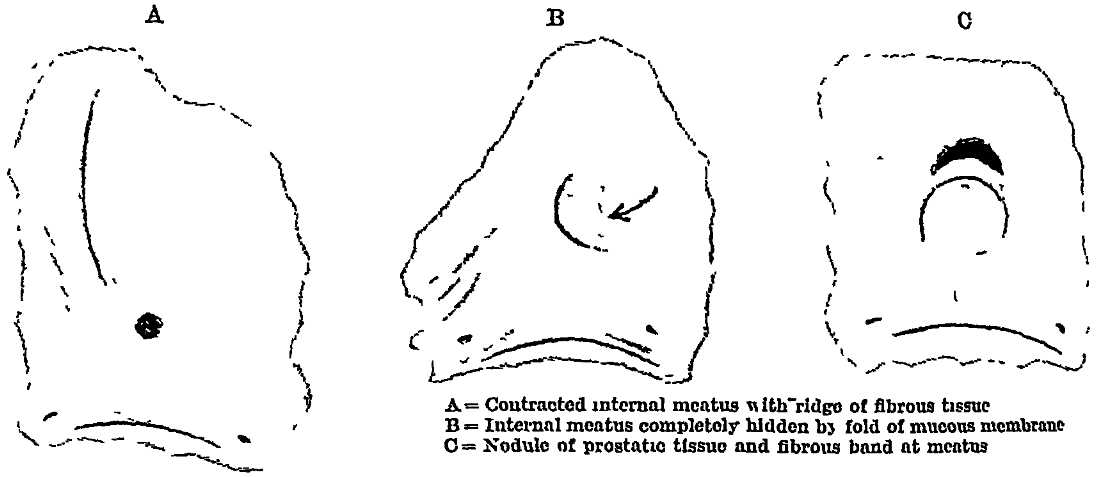
[3] H P Winsbury White THE LANCET 1922 i, 321

[4] THE LANCET, 1921, i, 1008

abnormal MacAdam and Sluskin found that of 18 cases with blood cholesterol less than 0 130 per cent 16 died of pyelonephritis and 2 recovered My own experience is at present confined to 23 cases In 6 of these, the blood cholesterol was below 0 130 per cent One calculous pyonephrosis died without operation, and the others made a rapid recovery after operation So far my cases have not been consistent, but the number is too small to draw any useful conclusions.

FIG. 1.—VARIETIES OF OBSTRUCTION AFTER PROSTATECTOMY.



A = Contracted internal meatus with ridge of fibrous tissue
B = Internal meatus completely hidden by fold of mucous membrane
C = Nodule of prostatic tissue and fibrous band at meatus

Sources of Sepsis

The causes of infection during and after the operation are numerous In the blind operation a small incision which will admit the first and second fingers is made in the abdominal wall and bladder In order to reach the prostate the abdominal wall must be forced down with the knuckles, and at the same time the forefinger of the left hand is introduced into the rectum and pushes up the prostate The left hand is necessary for the rest of the operation, so it is either regloved or hurriedly washed and used inside the bladder This proceeding is a source of infection of the bladder In many of these cases there is a considerable amount of kneading of the rectal wall by the rectal finger, a process likely to promote the passage of bacteria into the blood stream, whence they will reach the urinary tract

D = Contracted meatus and ridge of fibrous tissue

In order to avoid the rectal finger and the forcible pressure on the abdominal wall, I make an incision sufficiently long to allow the whole of the right hand to pass between the recti, the thumb remaining on the surface The enucleating finger can now work without strain at the enucleation of the gland It is difficult to understand why some surgeons fight shy of the extended incision It makes the operation much easier, reduces the time and effort of the enucleation, and thus reduces shock The wound, properly sutured, heals by first intention down to the tube, and is not the seat of hernia

The next source of sepsis is the tags, shreds, and partly detached nodules of prostatic gland, capsule, urethra and mucosa that are left after enucleation of the prostate when the blind operation is performed These shreds and nodules slough and form centres of sepsis, and a mass of slough encrusted with phosphates may be passed after the bladder has closed The dissection of these shreds and nodules is simply and quickly done by the open method, and is an important means of preventing sepsis The suprapubic tube used for drainage of the bladder does not adequately drain the prostatic cavity, and this cavity cannot be thoroughly washed out through it Examination of the first urine passed by the patient shows one or two drachms of pure pus which have been lying in the prostatic cavity.

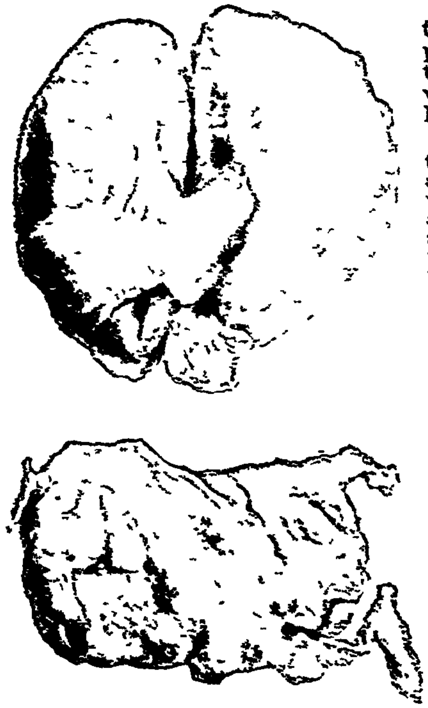
In order to wash out the prostatic cavity and prevent this accumulation, I tie a No 10 silk Coude catheter in the urethra, with the eye in the prostatic cavity Daily irrigation and, if necessary, constant irrigation, is made through the catheter and up through the suprapubic tube The catheter is removed on the seventh day, and at this time a considerable proportion of my cases commence to pass water, and in some the suprapubic wound is dry This indwelling catheter is used to prevent sepsis and epididymitis

The most common method of introducing sepsis after the operation is in the dressing of the suprapubic wound It is still a common method of treatment of the suprapubic wound to apply a dressing and voluminous layers of wool, and to change them after the dressings have become thoroughly soaked with urine It is impossible to avoid infection of the bladder when this method is used Urine is an excellent culture medium for bacteria, and the urine which soaks the dressings forms a direct communication between the skin of the abdominal wall, scrotum and perineum, and the bladder Drainage by a rubber tube or Paul's colostomy tubing attached to the suprapubic tube will keep the wound dry, but the interval between the removal of the tube and the closure of the wound allows infection to enter Immediate closure of the suprapubic wound and drainage by catheter in the urethra is too dangerous on account of hæmorrhage

The method I have found most successful is the Hamilton Irving suprapubic box This is fitted over the lower part of the wound, from which the tube projects Inside the box is placed a gauze bag of large boric acid crystals which practically fills the box The crystals are dissolved by the urine and form an antiseptic lotion The upper part of the wound which lies outside the box is protected with some antiseptic ointment Every day the box is removed, cleaned, and boiled, and the prostatic urethra and bladder are flushed with a large quantity

In 4 the transvesical operation had consisted in opening the bladder and making an attempt to dissect away the obstruction As far as I could judge these operations failed from not being sufficiently extensive to make a permanent cure

FIG 3



Enucleated prostate (above) and cuff of prostatic tissue dissected after enucleation

The operation that I performed on these 29 cases was as follows :—

1 All scar tissue in the abdominal wall was removed and the bladder separated from the abdominal wall

2 The bladder was dissected from the posterior aspect of the pubic bones and was completely mobilised

3 The fibrous ring was picked up in long forceps and cut backwards in the middle line and the scar tissue cut away round each side of the meatus, so that a free opening as large as the greatest expanse of the cavity was obtained. Where the meatus was obliterated a metal instrument was pushed up from the urethra and cut on from the bladder surface.

4 Dissection was if necessary carried into the prostatic bed, and layers of capsule and nodules of prostatic tissue removed.

5 The full Trendelenburg position good self-retaining retractors, a head light and long forceps and long curved scissors were required for this operation

6 If sepsis was present a catheter was tied in the urethra and constant irrigation carried out for several days

In all the 29 cases the operation was completely successful

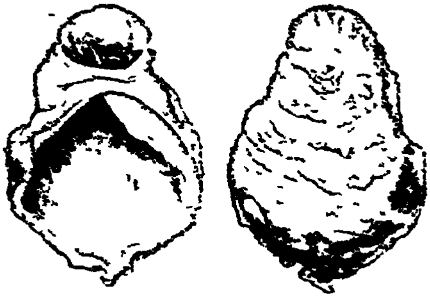
New Growth in the Wall of the Prostatic Bed

I shall now discuss certain changes in the wall of the cavity left after enucleation of a simple enlargement of the prostate

These are of two kinds: (*a*) recurrence of simple enlargement of the prostate, (*b*) malignant growth

Before discussing these cases I must refer for a minute to the anatomy of the enlarged prostate, and draw attention to two points that were familiar in the discussions that took place on the subject over 20 years ago

FIG 5



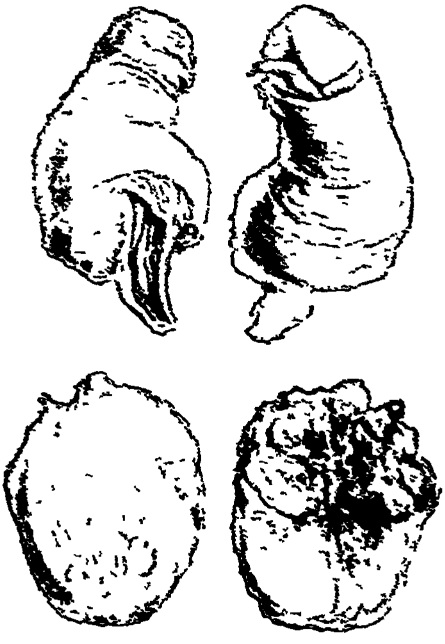
Anterior (left) and posterior (right) views of prostate removed at second prostatectomy

In simple enlargement of the prostate the changes take place for the most part in the neighbourhood of the urethra, and the outer part of the gland is expanded and compressed into fibromuscular layers between which remains of the flattened gland tissue can be seen These layers demonstrated by Cuthbert Wallace in 1903[6] form a thick capsule round the enlarged prostate In enucleating the prostate a varying thickness of this capsule is removed.

In 1904 I pointed out[7] that the portion of the prostate that was enlarged was situated above the ejaculatory ducts and that the verumontanum and ejaculatory ducts with the posterior walls of the prostatic urethra below this usually remain intact. The part of the prostate below the ducts remains behind after enucleation

In performing suprapubic prostatectomy it is sometimes possible to dissect out a cuff of fibromuscular tissue containing compressed gland tubules after enucleating an apparently perfect specimen of an enlarged prostate (Fig 3) This cuff lies at the upper and posterior part of the wall of the prostatic bed

FIG. 4.



Enucleated prostate apparently complete (above) with layer of malignant capsule dissected after enucleation

In these remains of the prostate that may be left behind after prostatectomy there are the nuclei from which further enlargement of the prostate may develop or malignant growth originate

The following instructive case recently came under my observation —

A. J B aged 64½ years, had suffered for some months from frequent micturition and dribbling The bladder was distended The prostate was enlarged, rather tough and somewhat fixed, and I noted that I considered it malignant although it was not actually hard or nodular

I operated in November, 1926 A round adenomatous nodule projected into the bladder and, to my surprise a well-formed enlarged prostate with two lobes and an intravesical lobe shelled out easily in one piece I was not satisfied, and examined the prostatic bed carefully and found a leathery capsule left behind This I dissected out as a cuff (Fig 4) Microscopical examination of the capsule showed that it was fibromuscular and showed gland alveoli It was infiltrated throughout with carcinoma The cancer cells were of small cuboidal type and arranged in alveolar masses sometimes showing a lumen Section of the prostate showed that at the outer part only it was infiltrated in places with cancer cells

Here the malignant growth had originated in the pathological capsule of a simple enlargement of the prostate and was spreading inwards towards the urethra these cases the blind operation described by Freyer had been performed It cannot be said that the post-operative obstruction in these cases was due to inexperience or lack of skill on the part of the operator Of the 60 cases, 37 were operated on by general surgeons attached to hospitals, 20 by urologists, and 3 by general practitioners practising surgery In all of these cases the degree of obstruction was severe In 26 there was a suprapubic fistula that had persisted since the operation or appeared shortly after the wound had closed In the other cases there was great difficulty in micturition There were recurrent attacks relieved with great difficulty by catheter in some cases Cystitis was present in most cases, but in a few the urine was clear In addition to this obstruction there were stones in the bladder in 6 cases, and stones in the prostate bed in 2

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[6] THE LANCET, 1903 ii 1578

[7] Medico Chirurgical Transactions, 1904 lxxxvii, 403

The type of prostate present at the original operation might be expected to have an influence on the development of post-operative obstruction There was difficulty in discovering the type of prostate removed, but in 39 cases the condition was definitely stated It was small, fibrous, and difficult to enucleate in 17, adherent and containing calculi in 3, and large and easily enucleated in 19 The number of the two main types of prostate was therefore practically equal In all the cases the blind operation was performed and in 3 it was done in two stages

In most of the cases trouble commenced during the convalescence from the operation The passage of urine was delayed, the wound remained open for a prolonged period and then closed or it closed and broke down again, or it remained closed and difficulty in micturition developed Some patients passed no urine at all after the operation In cases where the wound healed completely or the fistula only discharged occasionally, the symptoms were those of severe obstruction with occasional periods of complete retention In such cases the patient was on catheter life, the catheter being passed with great difficulty

ANATOMY OF PROSTATECTOMY OBSTRUCTION

It is many years since I showed[5] that there are two danger points for the development of stricture after prostatectomy—namely, at the membranous urethra and at the outlet of the bladder where the mucous membrane is torn across It is rare to find any contraction at the membranous urethra In only 3 of the 69 cases was this the seat of obstruction The reason for this immunity from contraction is, I believe, the fact that the urethra is torn across obliquely, the tear extending from the level of the verumontanum posteriorly to the membranous urethra anteriorly The strip of mucous membrane that results from this oblique tear remains attached to the posterior wall of the prostatic bed This strip prevents the formation of a circular ring of fibrous tissue which might develop if the mucous membrane were torn transversely The point of narrowing in 59 out of 69 cases was at the prostatovesical opening In three of these there was obstruction at the membranous urethra and from fibrous tissue in the wall of the prostatic bed as well The nature and degree of the obstruction varied In 29 cases on which I operated there was fibrous contraction at the internal meatus in all cases There was in addition to this a great variety of folds and flaps of mucous membrane (Fig 1 B, C, Fig 2 D), nodules of prostatic tissue (Fig 1 C, Fig 2 A) or of granulation tissue (Fig 2 C), either overhanging the internal meatus or in the immediate neighbourhood of the outlet

In several there was a hard fibrous ridge passing backwards or laterally from the site of the internal meatus across the base of the bladder (Fig 1 A, D) The fibrous contraction formed a hard ring round the internal meatus, which was so narrowed as to admit a fine olivary bougie or a fine probe In 5 cases the internal meatus was completely obliterated and covered with mucous membrane so that no trace of it could be discovered In one of these cases a false passage had been tunnelled through the bladder base and opened into the bladder behind the trigone (Fig 2 E) in another a false urethra tunnelled through the right lateral wall of the bladder

Treatment of Post-prostatectomy Contraction

The treatment of the post-operative obstruction carried out by the surgeon who performed the prostatectomy was ascertained in 58 cases

In 5 cases there was no active treatment of the obstruction Dilatation by the passage of sounds was commenced during convalescence and carried out at intervals in 25 cases In 17 cases attempts to pass instruments failed In 11 cases a second operation was performed by the surgeon with the object of overcoming the obstruction In 7 of these the suprapubic fistula was enlarged the finger introduced into the bladder, and sounds passed through the internal meatus followed by a retained catheter In some of these cases the fistula healed, but the obstruction recurred in the rest the fistula persisted and the contraction at the internal meatus recurred

Treatment of post-prostatectomy obstruction of this nature may be transurethral by dilatation, with sounds or rupture with Kollman's dilator, cutting with Young's punch or a urethrotome, burning with high-frequency cautery, or by open operation

The choice between these methods must depend partly upon the degree of obstruction as estimated by the ease or difficulty with which instruments can be passed into the bladder In 18 of the 69 cases of post-prostatectomy obstruction (26 4 per cent) that came under my care, I dilated the stricture and treated the cystitis In 4 of these cases there were stones in the bladder, and after dilatation these were treated by litholapaxy These were cases where I was able to pass instruments without extreme difficulty and without causing a serious reaction

The point that struck me particularly about the cases where dilatation had already been carried out and failed was that the surgeon had either failed to realise the importance of sepsis in causing a relapse of the obstruction, or had been unable to cope with the infection In the less severe grades of obstruction I chose dilatation rather as an experimental method of treatment, for it had already been tried and failed I found that, when combined with very careful and thorough treatment of the sepsis and removal of stones when present, it was successful in this grade of obstruction, but that the patient required to be kept under observation in view of relapse of the sepsis or of the obstruction In the more severe grades where I used dilatation it was not from choice, but either because the patient refused open operation or his condition was such as not to justify so severe a method of treatment

In regard to treatment by cutting with the urethrotome, biting with Young's punch, burning with the high-frequency cautery, and bursting with Kollman's dilators, such methods are only applicable to the minor degrees of post-prostatectomy obstruction, for it is necessary that a large calibre instrument can be introduced through the contracted internal meatus I personally prefer intermittent dilatation, combined with the retained catheter and thorough treatment of sepsis for this grade of obstruction

In the more severe grades of obstruction these methods do not come into consideration, for the necessary instruments cannot be introduced into the bladder

Operation for Post-prostatectomy Obstruction.

In 40 cases of obstruction after prostatectomy that were submitted to me, I recommended operation (57 9 per cent), and in 29 of these I operated for the obstruction The treatment previous to my examination in the 29 cases had been as follows —

Dilatation	15
Attempted dilatation that failed	5
Transvesical operation	9

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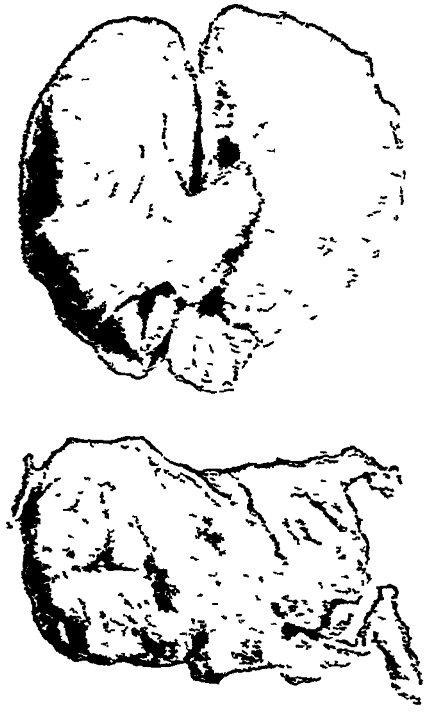
[5] Brit Med Jour, 1905, ii, 1250

In 4 the transvesical operation had consisted in opening the bladder and making an attempt to dissect away the obstruction. As far as I could judge, these operations failed from not being sufficiently extensive to make a permanent cure.

FIG. 3.



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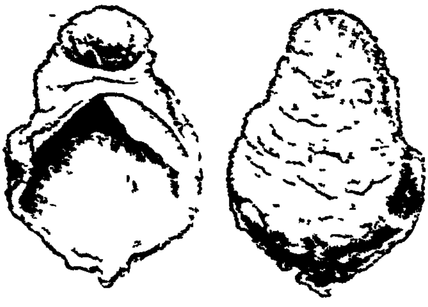

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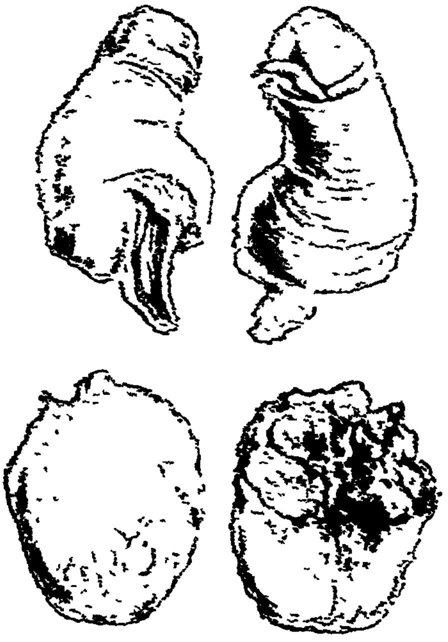

Enucleated prostate apparently complete (above) with layer of malignant capsule dissected after enucleation.

In performing suprapubic prostatectomy it is sometimes possible to dissect out a cuff of fibromuscular tissue containing compressed gland tubules after enucleating an apparently perfect specimen of an enlarged prostate (Fig 3). This cuff lies at the upper and posterior part of the wall of the prostatic bed.

In *these remains of the prostate that may* be left behind after prostatectomy there are the nuclei from which further enlargement of the prostate may develop or malignant growth originate.

The following instructive case recently came under my observation:—

A. J. B., aged 64½ years, had suffered for some months from frequent micturition and dribbling The bladder was distended The prostate was enlarged, rather tough, and somewhat fixed, and I noted that I considered it malignant although it was not actually hard or nodular.

I operated in November, 1926. A round adenomatous nodule projected into the bladder and to my surprise a well-formed enlarged prostate with two lobes and an intravesical lobe shelled out easily in one piece I was not satisfied, and examined the prostatic bed carefully and found a leathery capsule left behind. This I dissected out as a cuff (Fig. 4) Microscopical examination of the capsule showed that it was fibromuscular and showed gland alveoli It was infiltrated throughout with carcinoma. The cancer cells were of small cuboidal type and arranged in alveolar masses sometimes showing a lumen. Section of the prostate showed that at the outer part only it was infiltrated in places with cancer cells.

Here the malignant growth had originated in the pathological capsule of a simple enlargement of the prostate and was spreading inwards towards the urethra.

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[4] THE LANCET 1903 ii 1578

[5] Medico-Chirurgical Transactions 1904 lxxxvii., 403

It is not possible here to discuss the whole question of the development of malignant growth in a simple enlargement of the prostate This case illustrates one type of this form of growth

I have met with a number of cases where the prostate had been removed, and it was stated that the gland had shelled out easily, and after an interval of one or several years obstruction recurred On examination, there was a malignant infiltration of the upper part of the wall of the prostatic bed. These cases are, I think, similar to that I have just described

Recurrence of the Simple Enlarged Prostate

Incomplete removal of the enlarged prostate when only the intravesical projection of the prostate is removed or where only one lobe has been enucleated is occasionally met with and is easily recognised In these cases the patient is free from symptoms for a period and obstruction again develops These cases require no further discussion

A more important form of redevelopment of prostatic obstruction occurs when the enlarged prostate is reconstructed after what apparently was a complete enucleation The following is such a case :—

J C , aged 77, consulted me in 1916 on account of recurrent retention of urine The prostate was much enlarged, elastic, and movable I operated in May, 1916, and removed a large bilobed adenomatous prostate He was well for nearly ten years, and then began to have difficulty and frequency of micturition which increased rapidly for three months On rectal examination the prostate felt enlarged and similar to an ordinary enlargement of the prostate of moderate size In August, 1926, I opened the bladder and found an adenomatous nodule projecting at the internal meatus Partly by enucleation with the finger and partly by dissection I removed the nodule together with a complete ring of prostatic tissue After removal the specimen resembled, from the posterior aspect, an ordinary enlargement of the prostate with an intravesical lobe (Fig 5) From the anterior aspect the ring was complete only at the upper part, below this was an open trumpet-like tube with a smooth lining on the surface of which small openings of gland ducts could be detected

Microscopical examination showed a fibromuscular stroma with prostatic gland acini of various sizes similar in appearance to an ordinary adenomatous prostate

I have examined in consultation a number of cases where the prostate appears to have been reconstructed in similar fashion after enucleation of a complete specimen of enlarged prostate The recurrent simple prostate undoubtedly takes origin in layers of the pathological capsule that have remained in the wall of the prostatic bed A thick layer of this capsule is sometimes seen at the open operation and may be dissected without difficulty

Time of Healing.

I have discussed the two chief causes that delay healing and give rise to a persistent suprapubic fistula I will, in closing, refer more particularly to the time of healing of the suprapubic wound It is, I am afraid, a state of perfection at present unattainable that the bladder should be completely closed by suture at the end of the operation of suprapubic prostatectomy If this could be accomplished the danger of post-operative infection would be reduced to a minimum or entirely abolished

Two important factors prevent the adoption of this method—namely, pre-operative infection and hæmorrhage I look forward to the time when all operations on the prostate will be performed in an aseptic urinary tract and this objection would be eliminated The danger of hæmorrhage in a closed bladder would, however, remain

We must for the present therefore, accept the necessity for draining the bladder until the danger of reactionary hæmorrhage is passed and, if the urine is already infected, until the infection has been cleared up or granulation established in the raw prostatic bed It is another matter when this drainage becomes prolonged into a fistula

In an excellent article on the closure of the suprapubic urinary fistula following prostatectomy, Winsbury White [8] records observations on 68 hospital cases In these cases the average time in which micturition commenced was the nineteenth day In 60 per cent spontaneous micturition commenced on the twenty-first day. In 25 per cent micturition was delayed until the fourth week The earliest time of removal of the suprapubic drainage-tube was the seventh day The cases in which the drainage-tube was retained until the tenth day had less temperature and healed more quickly, the average time of closure of the fistula being the twenty-first day as compared with the twenty-eighth day, when the tube was removed on the seventh day Freyer held that patients who passed urine early in the convalescence often did badly

I have collected the dates in regard to 200 of my own private cases where the operation and after-treatment was uniform In all these cases a catheter was tied in the urethra, with the eye in the prostatic cavity at the time of the operation, and was retained for 7 days A Hamilton Irving box was applied soon after the operation, and daily or constant continuous irrigation was made through the catheter The tubes were removed on the fourth day and the catheter on the seventh day. The Hamilton Irving box was used until the wound was dry

I have omitted from these figures 3 cases which were so unusual as to depart altogether from the routine of my practice Two were cases of very severe sepsis where the bladder had been drained elsewhere, and I only did the second stage of the operation The other patient was very ill with chronic retention and sepsis, and there was a prolonged interval between the two operations and a tedious convalescence These 3 cases could not be regarded as representing the usual post-operative course With these exceptions the cases are consecutive and the results for three years are as follows —

		Day average		Day average
1924	Urine passed	13 1	Wound dry	16 7
1925	,, ,,	12 1	,, ,,	16 4
1926	,, ,,	10 1	,, ,,	16·0

In 1926, but for one or two long cases, the average day on which the wound was dry would have been better, as is shown in the following percentages —

In 1924	48 4	per cent were dry on or before the 15th day
,, 1925	44 4	
,, 1926	57 1	

Several patients passed urine when the catheter was removed on the seventh day, and were dry from that time

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[8] Brit Jour Surg , July, 1923, p 173

Donations and Bequests —Under the will of the late Mr Arthur William Scott, of St David's College Lampeter, Cardiganshire, the testator left, among other bequests, £7000 to the University of Cambridge, the income to be applied for the furtherance of physical science in such manner as the authorities may determine, £1000 to the Royal Society, the income to be applied for the advancement of the physical sciences as the president and council shall determine, £1000 to King Edward's Hospital Fund for London, £500 to the Royal National Lifeboat Institution The residue of the property as to one-third to the University of Cambridge, the income therefrom to be applied for the furtherance of physical science, one-third to the University of Oxford for like purposes, and one-third to St Thomas's Hospital London —Mr Henry Swain Bennett, of Holmewood, Kirby Muxloe, Leicestershire, who left £149,911, directed that after certain provisions the remainder of his property is to be divided between the Leicester Royal Infirmary and the Leicester, Leicestershire, and Rutland College, then on the death of a beneficiary he gives £5000 to the said college, £5000 to the Leicester Royal Infirmary, and certain other bequests, including £500 each to the Leicester Guild of Cripples Leicester and Leicestershire Maternity Hospital, Leicester Charity Organisation Society, Leicester District Nursing Association the Institution for the Blind, and the Leamington Home for Incurables —Mr Douglas Douglas Crawford, F R C S , of Rodney-street, Liverpool, bequeathed £1000 to the Liverpool Royal Southern Hospital after his wife's death

A NOTE ON THE PREPARATION AND PROPERTIES OF THE
OVARIAN HORMONE IN A WATER-SOLUBLE FORM

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Up to the present time the ovarian hormone has in the main only been obtained in the form of an oil insoluble in water, but soluble in organic solvents such as acetone, ether, and alcohol.

The original preparations of Herrmann and Frankel[1] and those of Allen, Doisy, and their co-workers[2] have been completely insoluble in water. In a communication from these laboratories (Dickens, Dodds, and Wright[3]) the work of these observers was repeated, confirmed, and extended, and since that time various clinical trials of material obtained by these processes have been made. A great difficulty has, however, been experienced owing to the fact that the material can only be administered either in the form of an oily solution or as an emulsion in some solution such as dilute aqueous sodium bicarbonate. If the former be employed it is found that prolonged administration in large doses often leads to the development of hard, painful nodes under the skin, and also the absorption of the material is very slow.

The second type of preparation—namely, bicarbonate emulsion—is unsuitable for general clinical work owing to the fact that the material tends to settle out in a coagulated form, with the result that even prolonged shaking does not succeed in producing a uniform emulsion.

It was felt, therefore, that before any extensive clinical trials could be made with this material, the method of extraction would have to be so modified as to yield a product which would either be soluble in water or which would be absorbed much more readily than the older one referred to above.

There have been many attempts in the past to prepare this œstrus-producing hormone in a water-soluble form, and amongst the most prominent of the published names are those of Zondek and Aschheim,[4] and of Laqueur, de Jongh, Hart, and Wijsenbeek.[5] In our hands, however, these methods have proved to be unsatisfactory, and on repeating the experiments of these authors we have not succeeded in obtaining the hormone in a water-soluble form. The oily material of the original process of Herrmann and Fränkel was treated in a variety of ways in the hope of rendering the active portion soluble in water. Thus mild acid and alkaline hydrolysis were tried without success, and even saponification with sodium ethoxide in an atmosphere of nitrogen was found to destroy the potency slowly without liberating any active water-soluble material.

It appeared, therefore, that some entirely new method of extraction would have to be evolved before the desired result could be effected.

During the course of this work some experiments which had been performed in these laboratories on an entirely different subject yielded some very valuable suggestions. A series of extractions of the suprarenal gland was being performed in the hope of obtaining a substance that would benefit cases of Addison's disease. In one investigation a quantity of suprarenal glands was extracted with alcohol in the manner described by Herrmann and Fränkel and Allen and Doisy for the preparation of the ovarian hormone. In fact this technique was followed in closest detail, and the final product was a clear oil completely soluble in ether, acetone, alcohol, and other organic solvents. The product was exactly similar to ovarian hormone in physical properties. Bicarbonate emulsions of this material were found to be very strongly pressor in action when injected into cats arranged in the usual manner for recording blood pressure upon a kymograph, and it was subsequently found that this effect was due to adrenalin held in solution in this oily material. It was naturally very surprising to find adrenalin present in a mixture which was completely soluble in ether, and one was tempted to think that if the original investigators had used this method of extraction instead of an aqueous one it would have been quite possible that this substance might have been regarded as being of a fatty nature, as many workers have regarded the ovarian hormone. We therefore decided to employ an entirely new method of extraction, and the first one tried was the acetone picric acid process which has been used by us for the preparation of insulin (Dodds and Dickens[6]). We obtained from ovaries by this process a small quantity of water-soluble hydrochloride which produced œstrus when injected into castrated animals. The method of extraction was complicated by the fatty nature of the tissue, and for subsequent experiments we employed placentas exclusively.

Details of Experiments.

The following experimental details show that it is possible to obtain by the acetone picric acid process, and by modifications of it, the ovarian hormone in the form of a water-soluble hydrochloride. The yields obtained by this process, however, were very small, as will be seen from the experiment quoted below.

Minced pigs' ovaries were mixed with dry picric acid and extracted with 70 per cent. acetone. The acetone was removed by vacuum distillation, and the dry picrate obtained on filtering the aqueous residue was extracted with acid alcohol. On adding 15 volumes of acetone to this extract a precipitate formed, which, when well washed with ether and dried in vacuo, proved to be very soluble in water and to produce œstrus in ovariectomised rats in doses of 10 mg. The yields obtained by this method were of the order of 40 rat units per kg. On applying the above method to placenta, yields of over 90 units per kg. were obtained, the weight of one rat unit being 4.5 mg.

A long series of experiments was then conducted on the acid extraction of placenta. A typical experiment may be quoted as follows. 1400 g. of finely minced placenta were mixed with an equal weight of 7 per cent. hydrochloric acid and heated on a steam bath for five hours with frequent agitation. The pH was then adjusted to 3 and the mixture passed through a Sharple's centrifuge. On adding an equal volume of saturated aqueous picric acid a heavy precipitate was obtained which was filtered off on a Buchner funnel and extracted with acid alcohol (absolute alcohol 75 per cent., 3 N HCl 25 per cent.). The extract was treated with 15 volumes of acetone and the hydrochloride thus obtained well washed with ether and dried in vacuo. The yield in this experiment was 6.11 g., and this was found to be strongly active in 2.5 mg. doses (=1000 rat units per kg.).

Subsequent experiments show that still larger yields may be obtained by variation of the hydrogen-ion concentration to which the extract is adjusted before filtration. Active material may also be obtained by iso-electric precipitation. These points are under investigation.

The product so obtained is a pure white powder very soluble in water. It can be boiled in aqueous solution for a considerable period without loss of activity. The active principle passes completely through a collodion membrane, and the substance may be purified to some extent by this means. On extracting material active in 5 mg. doses with hot butyl alcohol the filtered extract yields a product the rat unit of which is 0.5 mg.

The chemical constitution is being investigated. The substance appears to be relatively simple and contains a fairly large proportion of sulphur. The

Pauly reaction for histidine is strongly positive Tryptophane also appears to be present

Standardisation of the products described above was carried out upon young rats of uniform weight they were ovariectomised and swabs were taken daily for seven days, or until seven consecutive smears typical of di-œstrus were obtained The animals were then divided into batches of six and varying doses were given to each batch The unit was taken as the smallest dose producing cornification within 48 hours in a batch of six rats This work was carried out by Dr J Lee Warner, who also introduced an additional check by mating the injected females and noticing the presence of vaginal plugs He was successful in obtaining plugs with this new water-soluble material, but found that a greater dose was required to produce mating than to evoke œstrus This problem will be the subject of a separate communication

Summary

A method is described for obtaining the œstrus-producing hormone in a water-soluble form by extraction from placenta, the yield being over 1000 rat units per kg The activity of the preparation can be easily reduced to below 0 5 mg per rat unit Further work indicates that this degree of purity may be exceeded without much difficulty The properties of the new extract are discussed

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THE PSYCHOLOGICAL TREATMENT OF MANIA AND DEPRESSION.

BY ERNEST SNOWDEN, M B, B S LOND,

PSYCHOLOGIST TO THE HOSPITAL FOR EPILEPSY, MAIDA VALE, AND ASSISTANT IN THE DEPARTMENT OF PSYCHOLOGICAL MEDICINE, ST BARTHOLOMEW'S HOSPITAL

OF late years the treatment of certain cases of mental disorder without certification has become a practice amongst psychologists and the more advanced medical practitioners Cases of mental disturbance which would have been certified without hesitation only a few years ago are now recognised as being capable of treatment in their own homes or in an ordinary nursing home

The advantage of this to the patient is very great, so great that the physician is justified in taking a certain amount of risk in following this line of treatment so long as he is doing so with the cooperation of the patient's relatives It is important to realise that a patient need not of necessity be certified because he is certifiable

It is a fact that a great many cases of insanity can be prevented if they can be properly dealt with before the condition has completely developed Certification is a very serious matter for anyone The time will, no doubt, arrive when treatment in an asylum will lose the terror that is at present attached to it, but certification now means to the ordinary individual the giving up of the struggle, that from fighting his condition he is reduced to helplessness, that he has reached the lowest levels of mental capacity, and that his failure to overcome his illness is complete From this state the re-education process is slow and difficult, and the fact of certification leaves behind it a feeling of insecurity which must take many years for its removal, if indeed it ever disappears

To the ordinary individual the segregation of the insane patient is so absolute, he is cut off from his fellow men, and his life as a member of his community ceases It is for this reason that the lot of anyone recently discharged from an asylum is so hard He is returning to live in a tribe which has once turned him out Before he is readmitted to the life of the tribe everyone around him must be convinced that the condition which made his exclusion necessary will not return This state of affairs renders his return to ordinary circumstances more difficult, and produces in him a state of apprehension inimical to recovery It is the intention of this paper to consider two of the milder forms of psychosis and to show how these may be foreseen and prevented

The emotional states such as fear, sex, and anger are preparations for physical activity The natural result of the presence of something dangerous in our environment is that we should run away, and the condition that we recognise as fear is a preparation in the body to enable that escape to be effected Similarly, anything that threatens to injure some person or thing that we would naturally protect arouses us to a condition of body which we recognise in ourselves as anger These emotional states are, therefore, physical, and they are permitted a certain amount of expression in a civilised community, although they are not allowed to attain complete satisfaction Rage, for example, is discouraged and punished because of its danger to others, while anger, which is a controlled rage, is tolerated

Physical exercise assists in providing an outlet for the forbidden activity, while relief can sometimes be obtained by substituting one emotion for another For example, a soldier in the trenches who is afraid of the shells that threaten him and who cannot run away can attain some degree of relief by the physical activity of digging, or if this is denied him, by shouting or using bad language, or by some expression of anger In this last case an emotion (panic) which is not allowed by civilisation is expressed through the channel of an emotion (anger), of which civilisation is tolerant In this example it will be seen that there is something to express which needs an actual physical activity to express it

These activities are, for the most part, concerned with the motor functions of the body The digestive functions, and those functions which are associated with digestion, are left unstimulated and tend to stop, so that a stasis of the intestine occurs and a lowering of the activity of the liver These two changes have been mentioned as examples and to indicate the nature of the physical disturbance which is occurring If these changes happen frequently, the result will be an habitual stasis of the intestine, an increase of the dangerous intestinal flora, and an absorption of toxins which will increase the depression and so give rise to a vicious circle The commonest emotion and the one most likely, apart from the frequency of its occurrence, to bring about this state of affairs will be the emotion of fear It must be remembered that fear may be aroused by actual danger, by the recall of a terrifying memory, either consciously or in the form of a phobia, or by a purely imaginative process in which the patient pictures himself or someone belonging to him in a position of danger.

It will presently be shown that the two conditions of depression and excitement are closely allied The chief difference between them seems to be that the depression state is the result of failure to secure any outlet for the physical activity which results from an emotional response, while the state of restlessness is an expression of that activity, not necessarily directed towards the object for which it was aroused, but possibly spread over all the events of the patient's life The cause of the condition is the same in both cases, being the control that is exercised by civilisation in preventing the expression of natural desires This control has also this effect, that it prevents the recognition by the patient in a great number of these cases of the actual desire which is being stimulated, and so denies to him the opportunity of dealing with the difficulty for himself in a logical manner.

Mania

Where the conditions of the patient's life are such as to produce a constant stimulus of one or other of these emotions there will result an activity in excess of the normal needs of the individual and the consequent development of restlessness, excitability, and mania

Restlessness is an extremely common symptom in conditions of anxiety, and it is very frequently present in states of depression Patients rarely complain of this symptom alone, but the fact that it exists is evidence of the presence of a stimulus of some kind strong enough to arouse activity in the motor mechanism A characteristic of it is that it leads the patient to expend more physical energy in the carrying out of any activity than the task demands or than would be needed by others for its performance Excitability is only a further degree of the same condition, except that the energy is always present, ready to be fired off at the slightest stimulus, and usually resulting in an expression of anger in circumstances where the ordinary healthy individual would exercise control, anger being, as stated above, the emotional activity of which civilisation is most tolerant Mania is a condition in which control is largely in abeyance In this condition the violence is expressed without any apparent outside stimulus whatever, and is often directed aimlessly upon animate or inanimate objects indiscriminately It will be of value to consider the bodily mechanism which underlies all this activity

In considering the activity of the excitement state we must realise that, apart from those functions which are directly or indirectly concerned with digestion or excretion, the whole body is involved, and it is obvious that there must be some mechanism at work more potent than that which is ordinarily employed in everyday life The activity is so persistent, so untiring, and in the acute condition of mania so violent, that it may go on to complete exhaustion and death This degree of activity could only be attained for a very short space of time if conscious effort were the only stimulus being employed It appears that the glands of internal secretion play a large part in this mechanism, and that the gland which is chiefly concerned is the parathyroid This gland is said to be stimulated by the products of muscular activity circulating in the blood stream The parathyroid secretion produces an over-excitability in the brain-cells leading to a greater activity or preparedness for activity in the motor cortex This in turn produces a condition for which muscular activity is the only relief, and leads to the development of a vicious circle

Some such cycle as this would account for the restlessness in people who feel that they must constantly be doing something without pause, resting only when they are asleep, and achieving the state of sleep only with difficulty This mechanism would account also for the phenomenon which has been observed by everybody—namely, the occurrence of sleeplessness at the end of a day when the muscles have been used more than usual and when the individual himself is actually very tired In the excitement state sleeplessness is a very common symptom, and the distress caused even in the milder forms of this condition by the experience of night after night of wakefulness is very great, and is one of the most important of the symptoms against which treatment must be directed In such cases rest in bed must be enforced until the vicious circle is broken, and the best sleeping draughts are those which act as depressants to the activity of the motor cortex

The following case illustrates the condition which has just been described

A man, aged 35, manager of a large factory, complained of restlessness with attacks of extreme excitability, amounting at times almost to maniacal outbursts These were largely directed against his wife of whom he was very fond He was restless at the office, making work for himself when he might have remained unoccupied, he was restless in his amusements, only enjoying golf or bridge if there were high stakes to make the game exciting Between two rounds of golf he would hardly wait to finish his lunch before he was worrying his friends to start out again He slept poorly The condition threatened his home life and made him acutely miserable He realised that these outbursts of excitement were unreasonable, and yet he was unable to prevent them, so that he was frequently morose and depressed He believed that he would become insane and he feared that he might injure his wife in one of these excitement states

His family history was of importance His mother had deserted his father when the patient was only 5 years old, and the patient and his brother had been brought up by foster parents who were not particularly kind to them At the age of 14 the only kindness that the patient had received had been from his father's solicitor, who managed their affairs, and from this man's wife His father, who was an invalid, played a very small part in the patient's life and he saw him very little

The patient went to school in Ireland and was a keen Rugby football player At the age of 19 he believed himself to be in love with his guardian's sister who was 14 years his senior At that age he went to South America, where he was extraordinarily successful, and at the age of 23 he returned to England to join the army. He had considerable experience as an infantry officer, and then transferred to the R A F, where he took a pilot's certificate He then developed attacks of asthma and was eventually invalided out of the army When he was 26 he married his guardian's sister who was then 40 years old He realised that it was taking a definite risk for anyone of his age to marry someone so much his senior, but he felt compelled to take the step Soon after this he obtained his present employment as manager of some works abroad, where he was brilliantly successful

He found that his wife, who had achieved considerable social popularity in the place where she lived, was one of those people whose chief object in life is to be a social success, and he conceived the idea that she was neglecting him in order to please other people This habit of hers was a constant source of grievance to him, and was the invariable cause of their quarrels She was quite unable to change her life-long habit, while he began to see neglect of himself in her most trivial actions He was obsessed with the idea that she must think of him first in everything, in fact, he behaved just as a spoilt child would do

The examination of his mind made it clear that he was looking upon his wife as if she were his mother and demanding of her a complete absorption in his affairs This attention she was either unable or unwilling to give, with the result that the patient developed the excitement symptom which was a manifestation of the energy which he might have used in primitive circumstances to insist upon her compliance with his wishes, but which his civilised mind endeavoured to keep under control This energy was expressed in the excitement condition in which he lived, his energy begetting more energy in the manner that has been described above

The *treatment* can be briefly described He was put to bed in a nursing home and given sedative drugs, with the idea of bringing the energy under control and breaking the vicious circle The whole circumstances of his case were explained carefully both to the patient and to his wife, so that they were both completely aware of the situation With this understanding the patient's fear of himself diminished, while his wife realised how little was necessary on her part to put their whole married life on a right footing.

A second case will further illustrate this condition

The patient was a sister in charge of a ward in a large London hospital. Her history showed that she had been brought up very strictly She was engaged at 23 to marry a man considerably older than herself, but he died shortly afterwards, and her sex during this engagement had not been consciously aroused Her first knowledge of anything to do with sexual matters was from the lectures on venereal diseases, which was part of her nursing training The patient felt relieved that she had not married and she developed a horror of anything to do with sex

For two years previous to the onset of her illness the patient had been in a low state of health associated with a gradual impairment of her sight Her character about this time was said to have changed From being contented and good-tempered she became irritable, and in the last six months previous to her breakdown she became rapidly more restless The onset of the condition was sudden with restless wanderings and incoherence

The patient was put to bed in a nursing home, under the constant supervision of day and night nurses She was completely disoriented and dissociated, there were constant restless movements, a plaintive voice and a childish attitude.

Pauly reaction for histidine is strongly positive Tryptophane also appears to be present

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Where the conditions of the patient's life are such as to produce a constant stimulus of one or other of these emotions there will result an activity in excess of the normal needs of the individual and the consequent development of restlessness excitability, and mania

Restlessness is an extremely common symptom in conditions of anxiety, and it is very frequently present in states of depression. Patients rarely complain of this symptom alone, but the fact that it exists is evidence of the presence of a stimulus of some kind strong enough to arouse activity in the motor mechanism A characteristic of it is that it leads the patient to expend more physical energy in the carrying out of any activity than the task demands or than would be needed by others for its performance Excitability is only a further degree of the same condition except that the energy is always present, ready to be fired off at the slightest stimulus and usually resulting in an expression of anger in circumstances where the ordinary healthy individual would exercise control. anger being as stated above, the emotional activity of which civilisation is most tolerant Mania is a condition in which control is largely in abeyance. In this condition the violence is expressed without any apparent outside stimulus whatever, and is often directed aimlessly upon animate or inanimate objects indiscriminately It will be of value to consider the bodily mechanism which underlies all this activity.

In considering the activity of the excitement state we must realise that apart from those functions which are directly or indirectly concerned with digestion or excretion, the whole body is involved, and it is obvious that there must be some mechanism at work more potent than that which is ordinarily employed in everyday life. The activity is so persistent so untiring. and in the acute condition of mania so violent, that it may go on to complete exhaustion and death This degree of activity could only be attained for a very short space of time if conscious effort were the only stimulus being employed It appears that the glands of internal secretion play a large part in this mechanism, and that the gland which is chiefly concerned is the parathyroid. This gland is said to be stimulated by the products of muscular activity circulating in the blood stream The parathyroid secretion produces an over-excitability in the brain-cells leading to a greater activity or preparedness for activity in the motor cortex This in turn produces a condition for which muscular activity is the only relief, and leads to the development of a vicious circle

Some such cycle as this would account for the restlessness in people who feel that they must constantly be doing something without pause, resting only when they are asleep, and achieving the state of sleep only with difficulty. This mechanism would account also for the phenomenon which has been observed by everybody—namely, the occurrence of sleeplessness at the end of a day when the muscles have been used more than usual and when the individual himself is actually very tired In the excitement state sleeplessness is a very common symptom, and the distress caused even in the milder forms of this condition by the experience of night after night of wakefulness is very great, and is one of the most important of the symptoms against which treatment must be directed In such cases rest in bed must be enforced until the vicious circle is broken, and the best sleeping draughts are those which act as depressants to the activity of the motor cortex

The following case illustrates the condition which has just been described

A man, aged 35, manager of a large factory, complained of restlessness with attacks of extreme excitability, amounting at times almost to maniacal outbursts. These were largely directed against his wife of whom he was very fond. He was restless at the office making work for himself when he might have remained unoccupied he was restless in his amusements only enjoying golf or bridge if there were high stakes to make the game exciting Between two rounds of golf he would hardly wait to finish his lunch before he was worrying his friends to start out again. He slept poorly The condition threatened his home life and made him acutely miserable. He realised that these outbursts of excitement were unreasonable and yet he was unable to prevent them, so that he was frequently morose and depressed. He believed that he would become insane and he feared that he might injure his wife in one of these excitement states

His family history was of importance His mother had deserted his father when the patient was only 5 years old, and the patient and his brother had been brought up by foster parents who were not particularly kind to them At the age of 14 the only kindness that the patient had received had been from his father's solicitor, who managed their affairs, and from this man's wife His father, who was an invalid, played a very small part in the patient's life and he saw him very little

The patient went to school in Ireland and was a keen Rugby football player At the age of 19 he believed himself to be in love with his guardian's sister who was 14 years his senior At that age he went to South America, where he was extraordinarily successful, and at the age of 23 he returned to England to join the army He had considerable experience as an infantry officer and then transferred to the R A.F where he took a pilot's certificate He then developed attacks of asthma and was eventually invalided out of the army When he was 26 he married his guardian's sister who was then 40 years old He realised that it was taking a definite risk for anyone of his age to marry someone so much his senior, but he felt compelled to take the step Soon after this he obtained his present employment as manager of some works abroad, where he was brilliantly successful.

He found that his wife, who had achieved considerable social popularity in the place where she lived, was one of those people whose chief object in life is to be a social success, and he conceived the idea that she was neglecting him in order to please other people. This habit of hers was a constant source of grievance to him and was the invariable cause of their quarrels She was quite unable to change her life-long habit, while he began to see neglect of himself in her most trivial actions He was obsessed with the idea that she must think of him first in everything; in fact, he behaved just as a spoilt child would do

The examination of his mind made it clear that he was looking upon his wife as if she were his mother and demanding of her a complete absorption in his affairs This attention she was either unable or unwilling to give, with the result that the patient developed the excitement symptom which was a manifestation of the energy which he might have used in primitive circumstances to insist upon her compliance with his wishes, but which his civilised mind endeavoured to keep under control This energy was expressed in the excitement condition in which he lived, his energy begetting more energy in the manner that has been described above

The *treatment* can be briefly described. He was put to bed in a nursing home and given sedative drugs, with the idea of bringing the energy under control and breaking the vicious circle. The whole circumstances of his case were explained carefully both to the patient and to his wife, so that they were both completely aware of the situation. With this understanding the patient's fear of himself diminished, while his wife realised how little was necessary on her part to put their whole married life on a right footing

A second case will further illustrate this condition

The patient was a sister in charge of a ward in a large London hospital. Her history showed that she had been brought up very strictly. She was engaged at 23 to marry a man considerably older than herself, but he died shortly afterwards, and her sex during this engagement had not been consciously aroused Her first knowledge of anything to do with sexual matters was from the lectures on venereal diseases, which was part of her nursing training The patient felt relieved that she had not married and she developed a horror of anything to do with sex.

For two years previous to the onset of her illness the patient had been in a low state of health associated with a gradual impairment of her sight. Her character about this time was said to have changed. From being contented and good-tempered she became irritable, and in the last six months previous to her breakdown she became rapidly more restless The onset of the condition was *sudden* with restless wanderings and incoherence.

The patient was put to bed in a nursing home, under the constant supervision of day and night nurses She was completely disoriented and dissociated, there were constant restless movements, a plaintive voice and a childish attitude.

If she was left unattended she would get out of bed and run from the room When spoken to firmly she would answer questions coherently for a moment or two, and then return to her dissociated state She was very exhausted by the persistence of the restless movements, which were only controlled by strong hypnotics, and she explained in a lucid moment that "it was more comfortable to keep moving than to lie still" (This statement by the patient is evidence that there is stimulation of the muscles through the motor cortex in such cases) She was obviously in a state of terror It was presently noticed that, although she occasionally spoke of suicide to the nurses, she always ran away from the open windows These were consequently closed and screwed down and very shortly afterwards the patient became more composed and made no more attempts to run from the room It was then possible to examine her mind more closely

The patient was able to explain that for six months she had had occasional attacks of dissociation, and that she had had *hallucinations of hearing* She heard sexual suggestions which were to her intolerable, and on several occasions she heard voices instructing her to take poisons from the poison cupboard which was in her charge She had found herself standing in front of the open poison cupboard without any idea as to how or why she had gone there She had been unwise enough not to consult anybody about it because she knew that she would have to give up her work if she did so The sexual hallucinations were in relation to a member of the staff of the hospital, whose attitude towards her had always been entirely professional, and to whom she had shown not the slightest sign of any such interest This is interesting as showing the development of the hallucinatory process Her repression of sex was so complete that she was apparently ignorant of sexual matters, and it was only in the form of an hallucination that her normal sexual wishes were able to gain expression, and this only by causing a complete breakdown of her ordinary conscious control and by producing a dissociation state It seems not improbable that the idea of suicide arose in consequence of the absence of response to her subconscious wishes from the man towards whom they were directed

Her recovery began with the dislike of surveillance, and this was gradually relaxed A slow change came over her personality during the first two days of the period during which she was returning to a normal condition, and she was weak and ill and depressed after this recovery The final recovery of her normal personality took ten days, and there was a complete amnesia for the whole period of her acute attack She did not then know the people who were surrounding her and expressed surprise at their friendliness and kindness

The period of her amnesia was then very cautiously recalled to consciousness, and she began to see without any outside suggestion that sexual wishes had been the cause of her dissociation, an idea which distressed her very much, and she recognised at the same time the true nature of the hallucinations

She was very restless and very conscious of her body This was controlled to some extent by means of luminal and medinal, while a mixture containing salix negra helped considerably to relieve the restlessness There was this change in her personality whereas she had been completely unselfconscious she was now shy and selfconscious She was persuaded to re-educate herself to these new circumstances, and she slowly succeeded in this endeavour, so that when seen three months later she was quiet and fairly well It was not until some eighteen months later that she was able to live anything like a normal energetic life again or to take up her life as a nurse once more

DEPRESSION

In some of these conditions the object for which the energy is aroused can be recognised and the energy liberated If a man is frightened he can run away By taking this natural course he uses up the energy that has been aroused, and his excited physical state is relieved If, however, there occurs a constant stimulus to one or other of the emotions and the complete expression of the emotion is denied, the excitement state gives rise to symptoms It is necessary now to consider those cases in which the energy can have no outlet, where there is no possibility of its being utilised, either because of the conditions in which the stimulus occurs, or because the stimulus is so opposed to the social ideal that it cannot be recognised This condition is probably the commonest cause of depression and melancholia and explains the reason why physical lethargy and helplessness, a form in fact of paralysis of the whole system, is so commonly associated with depression, and so often forms the most important symptom in melancholia

The circumstances leading up to this condition can best be illustrated by an example a wild bird if it is held in the hand will struggle to escape This struggle is the undirected activity of the instinct of self preservation, and if the bird is released at this moment it will fly away more rapidly and to a greater distance than it would do in any other circumstances If, however, the bird is held so securely that escape is impossible, after a few futile efforts to escape it will lie still in the hand A new phase in the struggle has now been reached Just as the effort to escape is the result of the stimulus to the instinct of self preservation and is automatic, the panic being stronger than the capacity for control, so, this stillness which succeeds it is an automatic process It occurs in all probability in order that the bird shall be prevented from destroying itself by its own attempts to escape, and is, therefore, not the result of reasoning The bird does not say to itself, "now I will lie still until a way of escape appears" It lies still because the "activity panic" has given place to a "stillness panic," which is equally an emotion, but which is associated with an inability to move If now the bird is freed, there is an appreciable interval between the time that it is free, and feels itself to be free, and the moment that it can summon sufficient energy to fly away. This shows that the inertness which developed to prevent useless activity lasts beyond the need for it, and has a tendency to prevent the reappearance of the normal activity when the way for escape lies open Instances such as this in the animal kingdom can be multiplied to almost any extent

If the same circumstances affecting the human animal are observed a similar condition of affairs will be noticed Fear, in man, the result of the stimulus to the self-preservation instinct, is normally followed by running and a search for somewhere that is safe If, however, the stimulus persists over a longer period and the conditions are such that there is no escape and no possibility of escape, then the physical state becomes one of stillness and inertness similar to that shown by the bird when it is closely held in the hand

It may be that in primitive circumstances this stillness would be imposed upon us in order to assist us to escape observation We observe it in ourselves when we are awakened from a deep sleep, at night, by something unusual that has occurred We lie rigid, with the heart beating rapidly and the breathing diminished and shallow This rigidity is automatic The soldier in the trenches, who is terrified by shell fire and cannot escape, will collapse into a semi conscious state in which he cannot walk unaided He will not speak nor be persuaded to eat or drink, and he may remain in this condition for hours or days

The foregoing is a description of an acute condition of helplessness, a condition aroused by something actually alarming which occurs in our environment, but we are more concerned here with the chronic form of this acute condition If a means of escape is provided for panic, the violent activity of running is observed, whilst anxiety can be looked upon as chronic fear, and is associated with over-activity of the muscles and restlessness In a like manner the chronic state of the "stillness" reaction is associated with an inertness and incapacity for exertion of any kind It must be looked upon as a reversal of the ordinary activity which follows the stimulus of an instinct, and the same rules will apply when the emotion that is aroused is sex or anger Examples of this reaction occurring in every-day life are not difficult to find

The patient is afraid of an illness, say, for example, of cancer, or what is perhaps still more terrifying, of insanity, due to an inability to understand his physical or mental symptoms There is no escape, he cannot run away from himself, and because there is no escape, inertness, helplessness, and grief replace muscular activity, restlessness, and excitement In the case of the young girl jilted by her lover, her sex is prevented from achieving the end for which it was aroused, and there is no escape from the situation The excitement and happiness of courtship is replaced by the inertness and helplessness of grief

With these examples before us it is easy to understand the symptoms of depression and of melancholia The muscle weakness is accompanied first by a disinclination to activity and finally by an inability to move, and when the patient has reached this stage no stimuli are of any avail because it is not a question of "will not" move but of "cannot" move The last state of the illness is shown by the melancholic who sits "in a heap" all day long resenting the approach of any one for fear he should be called upon to make some effort of which he is physically incapable

A disturbance of the digestion follows The appetite goes and food is refused. and finally all attempts at persuasion are resisted and forcible feeding has to be resorted to in order that the patient may be kept alive Although it must be recognised that this feeding is necessary in some cases it should be remembered that the condition is first of all developed at a time when the patient is unable to utilise the food that he forces himself to take.

Every function of the body becomes lowered in the same way as those which have been used as examples so that depression and to a greater degree melancholia are found to be associated with a lowered activity of endocrine glands and. in consequence with a lowered bodily temperature and a feeling of misery. Finally, because the general condition is working at such a low level there results a greater liability to certain diseases and a lessened capacity to resist them

These considerations of the causes that lead to depression and melancholia give us the clue to their treatment In examining such a patient we will find that there has occurred in his life some circumstance which has prevented the normal expression of one or other of his emotions and it is necessary. if he is to be saved from the development of the depression state. that this circumstance should be recognised The cause of the condition should be explained to the patient who is probably unaware of it and if possible his circumstance should be changed in order that the emotional stimuli shall be prevented or that the emotional responses may be given some outlet This will help to check the onset of the helplessness and will enable the rehabilitating natural activity to reassert itself

It is obvious that this work must be done in an earlier stage than the stage of melancholia. The melancholic can give us no information he resents our presence and our interference, because it is usually the precursor to some demand that he shall make some effort, and he feels incapable of making any effort.

The above description of depression and melancholia rather emphasises the physical elements in the condition and it is important to bear in mind that these states are physical that the depression state that appears in the syndrome as a mental symptom arises from the physical condition of helplessness which is a direct and automatic result of the inability of some conscious or subconscious wish to gain expression

PHYSICAL AND PSYCHOLOGICAL TREATMENT.

The correct treatment of the patient from the physical point of view is of very great importance The conditions here described and particularly the state of depression. have the effect of interfering with the general metabolism of the body. The digestion is slow and incomplete and there is in consequence increased infection in the intestine. largely the result of an increase of the *Streptococcus salivarius* Substances of a toxic nature the elimination of which is difficult circulate in the blood stream and there is sometimes a peculiar odour about these patients which probably emanates from this source

Apart therefore from the treatment of the patient in bed and in one room, attention must be given to diet and elimination High colon wash-outs should be practised every day and large amounts of bland fluids should be taken in order to assist in the elimination of toxins Lemon water. barley water and magnesia drinks should be given as much as the patient can stand Baths are of value particularly in the states of restlessness and mania Where the restlessness is extreme a prolonged tepid bath each day will often have more effect in soothing the patient than the exhibition of any drug

The essential factor in the psychological treatment of these cases is that they shall be under close observation. and that circumstances shall allow of a prolonged visit from the psychologist every day. It is only by sitting down with the patient and watching him very carefully that any control can be brought to bear upon him No matter how dissociated the patient appears to be it is usually possible for the influence of the presence of the physician to arouse whatever is left of the patient's reasoning capacity. It gives the patient something to hold on by. Every effort should be made to produce in the patient a feeling of security He must be made to feel that those around him are endeavouring to help him and that they have a belief in his recovery. If the patient is able to attain this feeling of comfort and support he is more likely to be communicative and as his recovery proceeds he is better able to accept the assurance of the physician as to his condition

The psychological examination of the patient should not be attempted until his confidence has been won and until this feeling of security has been attained. Apart from this he must have reached a state of physical health approximating to normal Attempts to press this examination forward too rapidly are likely to end in increasing the strain from which the patient already suffers. The point at which the patient reaches this stage in his recovery is a matter for experience and gentle trial to decide Sometimes it will be found that the first recall of the patient's circumstances after he has been separated from them for some time will result in a recurrence of his symptoms and if this should happen the mental examination must be postponed and a further trial attempted when the patient is stronger. Treatment away from the surroundings that have given rise to the condition may prove to be all that is necessary to restore the patient to health. but unless some adjustment has occurred during the patient's absence from these surroundings. which relieves him from the strain that has caused the condition the cure is never permanent It is for this reason that the psychological examination must be carried out. the cause of the illness explained to the patient. and the circumstances altered if possible

A case will illustrate this.

A married woman aged 47, complained of inability to concentrate. forgetfulness depression and irritability with restlessness. She was intensely self-depreciative and felt that she was a burden to her husband and children, and on several occasions she had wandered away from home in a vague manner, while she constantly dwelt upon the idea of suicide. She avoided meeting people, became unable to manage her home and was inclined to avoid her husband and children of whom she was very fond.

Her history showed that she had been a nervous girl and that before her marriage she had been daily to business in London. She married a man who had been educated at Oxford and whose people were of importance in the locality where they lived She got on badly with her husband's mother who no doubt was at no pains to hide her feeling that her son had married beneath him. Her children were growing up the daughter was going to a finishing school abroad and the son to a public school so that during the period immediately preceding her illness she had been left with very much time on her hands Her husband had for a great many years taken a very keen interest in amateur theatricals and was away from home at night This had all tended to throw the patient upon her own resources and she had not been sufficiently well educated to know how to make use of her leisure

Careful examination revealed that she had through the whole of her married life felt herself to be inferior to her husband and lately to her children as well. It appeared that several factors went to the production of this state of depression Her husband's social activities had grown while she was bringing up the children, and now, although she had them no longer to occupy her time, she could not take an interest in his amusements It was as if someone belonging to her had been taken away from her, and her instinct would, consequently, be to keep him at home Her conscious reasoning saw that these relaxations of his were innocent and good for him, so that conflict occurred between these two ideas She may have been prevented from interfering with these pursuits of his by the fear that her presence might not be welcomed by her husband's friends In any case, the fact remained that she was unable to keep him at home and consequently her instinct to do so was denied its outlet It is probable that this conflict had been going on for the greater part of her married life, and only presented difficulties when the companionship of her daughter was lost

How far her age was of importance in the production of this condition it is very difficult to say It has been the practice to describe these cases as menopausal The patient was still menstruating, but at irregular intervals, and it should be kept in mind that in such cases the mental disturbance has been existing for many years previous to the onset of the menopause, and that a debilitating illness is quite as likely to produce the same effect It is common for cases of this type to date from an attack of influenza, which is looked upon by the patient as the cause of the illness, although the real reason for the appearance of the symptoms at this point is that the lowered condition of the body, caused by such an illness as influenza, lowers the resistance of the patient to the mental disturbance and enables the symptoms to appear The menopausal factor must, however, be considered in treatment, and the administration of gland substances to support the whole gland system must be added to the general treatment of such cases

Apart from the nursing home and general treatment usual in these cases, the whole situation was explained to both the patient and her husband After she had been in the nursing home for some weeks and was beginning to recover her strength, to take an interest in books, and to begin to make plans for the future, her husband was advised to come up to town and to take her out to dine and to the theatre, and she was allowed to spend Christmas with him in an hotel in London The physical fatigue caused by these expeditions was more than counterbalanced by the degree of mental comfort that she obtained by having her husband to herself Eventually she was able to return home and take up her life again Relief to her mind enabled her to overcome the physical state occasioned by grief, and she made a complete recovery. despite the fact that the menopausal symptoms still persisted

This type of patient is usually classed among the psychoses, because the behaviour in the acute stages requires so much supervision and control, but with proper treatment it is possible to recover No obvious changes are shown in the nervous system, except where these occur as a result of the toxins circulating in the blood stream These changes are not, as a rule, of a permanent nature unless the condition is permitted to persist for a very long time Properly treated in the earliest stage of the illness, these changes in the tissues are mild in character and only temporary in their effect

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ORTHOPÆDICS AT WEST HARTLEPOOL —By the aid of the Samaritan Fund a specially designed and constructed orthopædic department has just been opened at the Cameron Hospital, West Hartlepool

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL —Lord Clarendon was the principal speaker at a luncheon last week in support of the re-building scheme He said that a feature of the work of the hospital was immediate treatment without waiting for letters of recommendation, and that provision was being made for more than 18,000 new patients annually, in addition to the extension of the work of teaching and research A gyratory system for the 40,000 out-patients would be introduced on the ground floor No appeal for money had been made for 30 years Sir Richard Cruise said that last year the hospital rescued 150 cases from approaching blindness

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THE EFFECT OF THE ADMINISTRATION OF SODIUM BETA-HYDROXY-BUTYRATE ON THE GLYCOSURIA OF PHLORIDZIN DIABETES

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THE question of the conversion of fat into carbohydrate by the animal organism has been one of great controversy for many years Most authorities agree that so far as the vegetable kingdom is concerned this change can occur, but in animals experimental proof is still lacking and opinion is divided Lusk,[1] for instance stoutly denies that such a transformation takes place, and certainly many of the experimental results justify such a conclusion Geelmuyden,[2] on the other hand, believes that sugar can be formed from fat by the animal organism and he quotes experiments in which he has found a distinct rise in the sugar output as a result of feeding acetone bodies to rabbits In a series of injections of sodium acetoacetate and oxybutyrate to phloridzinised dogs, Marriott,[3] however, failed to find any increase in the output of glucose

In the resting state it has been shown that, on the basis of oxidation of fats to CO_2 and water, it is possible for the tissues to make use of the energy liberated in this way Murlin and Riche[4] showed that the intravenous injection of an emulsion of fat led to an increased heat production together with a fall in the respiratory quotient In the case of external work however, there is no evidence that muscles can use fat directly, although it has been clearly shown that they utilise glycogen Benedict and Cathcart[5] have demonstrated that during muscular exercise fat and carbohydrate are apparently equally well utilised, and the work of Krogh and Lindhard[6] indicates that muscular work can be performed at the expense of fat in the diet

Recently Hill, Long and Lupton [7] have shown that the respiratory quotient of excess metabolism during short periods of exercise is unity, irrespective of diet This indicates that, although fat in the diet may be used up during muscular exercise, the muscles themselves can only utilise carbohydrate

If carbohydrate is the sole source of energy for contracting muscle, and if fat is utilised in the performance of muscular work, the conclusion appears inevitable that fat must undergo a preliminary conversion into carbohydrate previous to its use by the muscles. Geelmuyden [2] also suggests that fats are transformed into carbohydrate via a ketone body stage, the transformation taking place in the liver This hypothesis seems reasonable when one considers that in all conditions where energy is obtained mainly from fat, as in starvation and during the administration of ketogenic diets, acetone bodies appear in excess in the blood and urine

If this be true the administration of acetone bodies to a dog rendered diabetic by means of phloridzin might be expected to cause an increase in the output of sugar This could be readily detected by a rise of the dextrose-nitrogen ratio in the urine, since in a completely phloridzinised animal all the glucose is presumably derived from the protein

Two Experiments

The following experiments were performed in order to find out whether any support could be adduced for this hypothesis Sodium beta-hydroxy-butyrate, prepared by neutralising the racemic beta-hydroxy-butyric acid with sodium hydroxide was used It was unfortunately impossible to obtain the lævo-rotatory acid The same dog was used for both experiments, and on each occasion received a constant diet of 500 g of minced meat twice daily Phloridzin in olive oil was given subcutaneously in one gramme doses twice daily on each day of the experiment The butyrate was given by stomach-tube at the end of the third day In the second experiment a small amount was vomited shortly after administration so that probably not more than 15 g was retained The animal was catheterised at the end of each 24-hour period to ensure accuracy of the 24-hour sample of urine

EXPERIMENT 1 —*Female Dog; weight 8 8 kilos*

EXPERIMENT 2 —*Female Dog; weight 9 3 kilos*

Day	Total nitrogen	Sugar output	D N ratio	Day	Total nitrogen	Sugar output	D N ratio
1st	14 3	43 1	3 01	1st	29 2 *	82 0	2 80
2nd	15 0	47 1	3 14	2nd	17 1	87 7	5 12
3rd	16 1	52 6	3 26	3rd	18 5	93 4	5 05
25 g sod beta hydroxy-butyrate given				20 g sod beta-hydroxy-butyrate given Slight amount vomited			
4th	17 9	51 0	2 84	4th	17 4	95 2	5 47
5th	17 5	55 5	3 17	5th	16 5	96 1	5 82
6th	16 8	53 7	3 20	6th	19 7	109 8	5 57
7th	14 7	45 4	3 08				

* Done in triplicate

In neither of the above experiments did the butyrate cause an appreciable rise in the D·N ratio, thus agreeing with the results of Marriott[3] Unfortunately we used only the racemic acid, and we feel that the results might have been more conclusive if we had also given the lævo-rotatory variety. Marriott suggests that, because the acid present in the urine is the lævo-rotatory form the body can only use the dextro-rotatory type, a conclusion which is scarcely warranted

Whether the butyrate can be changed into sugar or not still remains an open question Certainly no evidence of its conversion into sugar is afforded by the two experiments above The experiments of Magnus-Levy[8] suggest that because of the phloridzinisation the animal might be incapable of burning the ingested beta-hydroxy-butyrate.

Also, it is quite possible that the extra sugar might have been stored in the muscles as glycogen, to be used during muscular exercise later on As blood-sugar and presumably urinary sugar cannot be derived from the muscle glycogen there would be no change in the D N ratio

A further point of interest is that in the two experiments in the same animal under identical conditions, the D N ratio should show such a marked difference

We wish to acknowledge our thanks to Prof D. Noël Paton for performing the operation of perineotomy and for his helpful advice, and to Prof Leonard Findlay for his kindly criticism

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B FALLAX IN CHRONIC ARTHRITIS.

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IN the course of an investigation of the bacteriology of chronic arthritis, cultures were made from joints excised by Mr W H Trethowan for orthopædic purposes Very great care was taken during the operations to prevent contamination of the instruments and tissues by air-borne organisms The material, which consisted of cartilage in various stages of erosion, ligament, and synovial membrane, was cut into small pieces These were incubated aerobically at 37° in simple and in glucose broth Frequently every tube remained sterile, in certain instances pyogenic cocci grew, and in one case a pure culture was obtained of *B fallax*, an organism which has been isolated occasionally in the past from gangrenous wounds and cases of puerperal septicæmia There is no record in the literature of chronic joint infection by this bacillus, so that the following details are of interest

The material was obtained from a woman of 53 with chronic arthritis of several years' duration affecting both knees The synovial membrane was much thickened, but there were no definite osteophytes, and limitation of movement was due chiefly to pain

Isolation and Identification of the Organism.

The original cultures, made in broth, glucose broth, and on blood-agar, were incubated aerobically at 37° C In two tubes of glucose broth a pure culture of a Gram-positive bacillus grew The other tubes remained sterile Subcultures in the absence of the pieces of actual tissue present in the original tubes yielded growths only under strictly anaerobic conditions

The organism, a short Gram-positive, very slightly motile bacillus, was a strict anaerobe Spores were never seen in young or in old cultures, but growth could be obtained from week-old blood-agar cultures which had been heated to 80° C for ten minutes

Blood-agar —Growth slow and after 48 hours formed a fine grey film

Glucose broth —A fine opalescence after 48 hours

Broth and agar —Very little growth

Litmus milk —Slow acid formation Seven to ten days required for clotting

Sugar reactions (1 per cent sugar in litmus broth) —Gas production inconspicuous (Table I)

TABLE I

—	24 hours	12 days		Evidence of growth
Glucose	No acid	Acid	+	Visible
Maltose	„	„	—	Subculture
Lactose	„	„	+	Visible
Saccharose	„	„	—	„
Inulin	„	„	—	„
Starch	„	„	—	„
Dulcite	„	„	—	Subculture
Glycerine	„	„	?	No growth visible or in subculture

Agglutination Reactions

By the courtesy of Dr M Robertson, of the Lister Institute, standard cultures were obtained of several anaerobic organisms resembling the bacillus under investigation and were grown for three days in glucose broth After centrifuging, the deposit was diluted with saline until each cubic centimetre contained 500 million bacilli, and was injected into rabbits at intervals of seven days: first dose 1 c cm , second dose 2 c cm , third dose 3 c cm. The animals were bled ten days after the last inoculation and the agglutination reaction tested as in Table II , where it is shown that *B fallax* (Morcom) serum agglutinated *B fallax* (Morcom) itself and the bacillus Z under investigation in very high titre. Investigated organism Z serum agglutinated organism Z itself and *B fallax* (Morcom) in very high titre. No other agglutinations of any note were observed.

TABLE II

Organism	Serum				
	Normal (1)	Normal (2)	*Z*	*B fallax*	*B fallax* (Morcom)
Bacillus Z*	0	0	1/2000 in ¾ hr	0	1/625 in 2 hrs
*B fallax**†	0	0	0	1/125	0
B fallax (Morcom)*†	0	1/5	1/2000 in 55 mins	0	1/625 in 20 mins
B tertius†	1/5		1/25		
B cochlearis†			0		
B welchii†			0		

* Under investigation † Lister Institute

It is evident that the organism forms agglutinins readily and closely resembles the strain *B fallax* (Morcom) kept as a type culture at the Lister Institute. It seems justifiable, therefore, to classify it as *B fallax*.

Infectivity

Thick saline emulsions made from 24-hour cultures on blood-agar were injected intraperitoneally into mice without causing death or any appearance of illness. Several mice were killed at the end of 24 hours and cultures made from the blood, spleen, and peritoneal cavity. These remained sterile, except in the case of one mouse which showed a little fibrinous exudate on the liver. Cultures from this exudate gave a pure growth of an anaerobic Gram-positive bacillus resembling the original organism and agglutinated in high titre by *B fallax* (Morcom) serum and investigated organism Z serum.

Intramuscular injections in guinea-pigs did not yield any living organisms in cultures made later from the tissues at the site of injection.

The organism clearly possesses infective powers, but under experimental conditions these are not of a high order. This agrees with the findings of other observers working with strains of *B. fallax* isolated from wounds.

Clinical Consideration

Agglutinins are formed readily in human subjects. Dead organisms were employed in the form of a simple Wright's vaccine. Doses ranging from one million to 500 million were given in series and agglutination reactions tried five days after the inoculation (Table III).

TABLE III

—	Normal serum	Serum after course of vaccine
Original organism	No agglutination	1/200
Organism after passage through mouse	Ditto	1/600

A similar vaccine was used subcutaneously in the treatment of 47 patients with chronic arthritis (venereal disease, gout, and tuberculous infections were excluded). The series must not be regarded as representative of the general community. Most of the patients had already been treated by autogenous vaccines and elimination of septic foci and belonged to the residuum which fails to reap substantial benefit from this type of treatment.

The results were of three kinds:—

1. In a number of cases small subcutaneous doses—e g, one million bacilli—provoked intense reactions in the joints, and precipitated a transient attack closely resembling acute rheumatic fever of children. The severe reactions were not repeated with subsequent inoculation in the same patients, and were invariably followed by rapid improvement in the condition of the joints. All of these patients had previously had autogenous coccal vaccines without experiencing reactions of like nature.

2. The majority of patients improved steadily, and the pain reaction which commonly follows injections of autogenous vaccine made from pyogenic organisms was frequently replaced by its converse, a phase of gratifying freedom from pain lasting for several days.

3. A small but definite group of patients did not improve, and did not experience abrupt reactions, the transient phase of ease from pain or even (except in one instance) pain reactions in the joints.

The results can be tabulated as follows:—

	Per cent
Abrupt febrile reactions after small subcutaneous doses	8
Simple pain reactions	35
Period of ease after each inoculation	39
No immediate change	18
OR	
Complete arrest	12
Decided benefit	70
No relief	18

Conclusions

It has been impossible to determine by direct bacteriological methods whether *B fallax* is a common cause of arthritis or only an occasional inhabitant of diseased joints, but the clinical manifestations following the use of the corresponding vaccine suggest strongly that this infection is much more prevalent than might have been imagined. There is no evidence that it is the universal infective agent, and in the series under review exceptional cases occurred in which improvement was steady under autogenous coccal vaccines, came to a standstill when *B fallax* was substituted, and yet recommenced when *B fallax* was discarded and the autogenous vaccine employed once more. The best results were obtained in the more chronic varieties of arthritis and in the treatment of residual pain and swelling in joints which had been more acutely inflamed but had passed into a sluggish phase after improving up to a point.

One such case is of particular interest. At the onset of illness there was much pyrexia with staphylococcal septicæmia, a large turbid exudate in the pleural cavity, and severe multiple arthritis. *Staphylococcus aureus* was obtained from the blood and from the chest. The corresponding vaccine provoked such intense reactions that its use was discarded for a time in favour of a polyvalent anti-staphylococcal serum. As the pyrexia subsided, the man was left with chronic multiple arthritis indistinguishable clinically from that often classified as rheumatoid arthritis. In this phase his autogenous vaccine helped materially for a number of weeks but finally failed to be of any assistance. *B fallax* vaccine was given and produced pain reactions in the joints. The man improved rapidly and in a few months' time was ready to return to work. In this patient it appears to be quite certain that the original invader of the joints was a pyogenic coccus. The benefit obtained from *B fallax* in the later stages suggests that this organism was a secondary invader.

The effects following the use of *B fallax* have been so impressive that it would seem advisable to add this organism to the autogenous vaccine in the treatment of chronic arthritis, especially when the joints have been damaged previously by injury or coccal infection or are the seat of disease which has been non-pyrexial and insidious from the onset.

Some time ago a series of 200 cases was analysed in which the importance of streptococcal infection of the digestive tract was discussed. Recently a further series of 103 cases has been treated on similar principles, but with the addition of *B fallax* to the autogenous vaccine. The results have been distinctly better, and the method represents a definite advance in the therapeutics of the condition.

(Bibliography at foot of next page.)

Clinical and Laboratory Notes.

ULTRA-VIOLET IRRADIATION IN GANGRENE

BY PAUL BOUSFIELD, M R C S ENG,
LATE PHYSICIAN TO THE LONDON NEUROLOGICAL CLINIC, MINISTRY OF PENSIONS

THE following case has interesting features —

The patient was a woman aged 92 Her regular physician had been called in on account of a subacute attack of bronchitis, but on examining her back he found two large patches of dry brown gangrene which involved the skin and superficial fascia Round the edges of the gangrenous patches, which had retracted, there was about a quarter of an inch of raw flesh from which was oozing blood and a small amount of pus One of the patches of gangrene was over the right scapula; it was oval in shape and had an area of about 15 sq in After the slough was removed the depth of this lesion was about an eighth of an inch The other patch was over the posterior aspect of the head of the right humerus, and was about 4 sq in in area, after the slough had been removed the wound was a quarter of an inch in depth. There was also an oozing bedsore with an area of 2 sq in. over the upper part of the sacrum

The history of the gangrenous patches was interesting The old lady had been in the habit of sitting upright in a chair with a stiff, high, wooden back, against which she leaned on her right side for hours at a time in order to look out of the window The pressure had evidently occluded the blood-vessels in the gangrenous areas

Her condition was aggravated by renal insufficiency and cystitis of some years' standing, and her physician naturally took a very grave view of the case Knowing the effect of ultra-violet irradiation on small ulcers he asked me if it was likely to be of any use in this case I consented to test its effect, though I hardly considered in such a patient that it was likely to be completely successful. The gangrenous sloughs were first removed by repeated fomentation and with the help of scissors and forceps, with the result that the two raw excavated surfaces, described above, were left bare I then proceeded with the irradiation, using a portable arc which required 5 amperes at 240 volts to work it The current at the patient's house was unfortunately an alternating one, and I was therefore only able to use iron-cored carbon electrodes instead of tungsten which I should have preferred I mention this because the electrodes I used only develop an ultra-violet spectrum down to about 3000 A.U. wave-length, whereas tungsten electrodes reach as far as 1800 A U wave-length, and it is in this latter portion of the spectrum that the bactericidal rays are developed This is noteworthy because after two treatments the pus had completely disappeared and did not again return, in spite of the fact that the patient repeatedly pulled off her bandages

I began with a dose from the open arc at a distance of 3 ft for a quarter of an hour, irradiating the whole back, but using a concave mirror so as to focus radiant heat directly upon the open wounds The same dose was repeated in 48 hours, and thereafter was gradually increased up to 20 minutes, and the arc brought to within 18 in of the wound After the first two treatments the pus had disappeared After four—i e, at the end of ten days—new skin had formed half an inch all round the larger wound, and both wounds were covered with healthy granulations The oozing of blood, which had been continuous at first, had also completely ceased After eight treatments—i e, three weeks—the large wound was entirely covered with skin except for a small patch about the size of a sixpence in the centre, and the small wound had developed about half an inch of skin round the margin Granulations in the centre of this wound were proliferating too fast and had to be touched with copper sulphate At the end of about six weeks both wounds were completely covered with healthy skin, and the bedsore over the sacrum, which had also been treated, was completely healed

A noteworthy side-issue was the great improvement in the general condition of the patient When first seen, and for a month or so previously, she had been in a dazed and sometimes rather comatose condition, at the end of the treatment she was bright, cheerful, and intelligent.

The case is particularly interesting in that it suggests that bedsores in old people, which so frequently usher in the terminal event where bad nursing has preceded the physician's arrival, may now be more amenable to treatment

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DIASTATIC REACTION IN OBSTRUCTIVE JAUNDICE.

BY JOHN D. THOMSON, M.B, C.M.

IN May, 1922, when engaged in investigating the efficiency of the pancreas and liver in cases of sprue at the Seamen's Hospital for Tropical Diseases, London, I was asked by the resident surgeon if any of the biochemical methods I was employing would be likely to throw light on an obscure case of obstructive jaundice that was then causing anxiety Although several years have since elapsed I am led to believe that a few details of this case, suggesting the more general use of a very simple test, may be of interest

Recent History—The patient, an adult male well over middle age, had been operated on for gall-stones some weeks before his case was brought to my notice The gall-bladder had been emptied of calculi and drained In the ordinary course of events bile should now have been present in the stools and the drainage-tube dispensed with. As it was, there was still no trace of bile in the stools, and the tube draining the gall-bladder had to be retained The patient was losing ground and his general condition now suggested malignant disease (? cancer of the head of the pancreas) to the surgeon who had operated I understand that the surgeon had satisfied himself, by passing a probe at the time of operation, that the common duct was free and that all calculi had been removed

Diastatic Reactions—The diastatic reaction of the patient's urine would, I thought, throw some light on the case, and I offered to do a series of such reactions if necessary. The results were as follows:—

Date of examination	Result.	Date of examination	Result
May 19th	D =10–20	June 7th	D.=25
May 30th	D =66	June 8th	D =66.
May 31st	D =300	June 12th	D =100
June 6th.	. D =100	June 14th .	D =100

On May 19th the diastatic reaction (D=10–20) was normal, which showed that there was no obstruction to the flow of pancreatic juice into the bowel As bile was draining freely from the drainage-tube in the gall-bladder while there was no trace of it in the stools, the site of the biliary obstruction could be located with certainty as being then in the common duct somewhere below the entrance of the duct from the gall-bladder and above the entrance of the pancreatic duct

Some days later, as the patient's condition did not improve but rather grew worse, the examinations were resumed On May 30th the reaction (D = 66) showed that the obstruction now partially involved the pancreatic duct On May 31st pancreatic obstruction was complete At this stage I asked the house surgeon to keep a sharp look-out during the next few days for the appearance of bile and for the presence of a gall-stone in the stools But biliary obstruction remaining complete as before, the examinations were again resumed, and the results from June 6th to 14th clearly show that pancreatic obstruction, from being complete on May 31st, eased off until it reached a minimum on June 7th It again increased until, on the 12th and 14th, it was of the same degree as it had been on June 6th

This indicated a ball-valve action so far as the pancreatic obstruction was concerned, and made it reasonably certain that the biliary obstruction was due to a gall-stone that had passed along the common duct, and was now caught in Vater's papilla This diagnosis was confirmed by the surgeon, who now operated a second time and removed a gall-stone from the site indicated The patient made a good recovery, and there was no further sign of biliary obstruction Incidentally it may be remarked that these diastatic reactions showed that the kidneys were normally efficient

A CASE OF
FACIAL PARALYSIS OF AURAL ORIGIN
IN AN INFANT SEVEN WEEKS OLD

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AND
C JENNINGS MARSHALL, M S LOND, F R C S ENG,
ASSISTANT SURGEON TO THE HOSPITAL

THIS case seemed to us to be worth recording, as we have not known of a similar one occurring in infancy.

The child was born after a normal confinement, without instruments, and seems to have been normal in every way until, at seven weeks old, it was noticed that the left side of the face did not move when she cried She was seen by one of us (N H) at the Victoria Hospital for Children on Jan 21st, 1927 There was marked diminution of movement on the left side of the face, but paralysis was not complete The eyelid remained almost immobile in a half-closed position, otherwise the cranial nerves were normal. There was no discharge from the ear, and no indication of pain in any situation, and the child did not appear fretful The only abnormality detected was a slightly enlarged pre-auricular gland on the left side The mother stated that the child was still able to suck, though rather more slowly than before

Aural examination (C J M) showed that the drum was opaque and hyperæmic, with pronounced bulging No mastoid tenderness or œdema was present The right drum was normal There was nasopharyngeal muco-pus, but no gross adenoid vegetations On paracentesis of the left drum pus welled up in sufficient quantity to fill the external meatus Rapid healing of the drum, with complete recovery of the otitis, ensued The infant, seen just over two months later, showed no trace of facial paralysis, the drum was slightly more opaque, and the scar of the incision was just visible

The inflammation of the nerve must have occurred in the middle ear, in the aqueduct Considering the negligible size of the mastoid antrum at this age, the locality in which so large a quantity of pus was contained is rather difficult to determine A remarkable feature of the case was the very slight interference with the function of sucking which the facial paralysis produced This suggests that the part played by the facial muscles in the mechanism of sucking is less important than has been supposed, and that this function is almost entirely carried out by the muscles attached to the mandible and innervated by the fifth nerve

Medical Societies.

ROYAL SOCIETY OF MEDICINE

SECTION OF ORTHOPÆDICS

A MEETING of this Section was held on May 3rd, Dr W T GORDON PUGH, the President, in the chair

MR NORMAN D ROYLE (Sydney) read a paper, illustrated by epidiascope and cinematograph on the TREATMENT OF SPASTIC PARALYSIS BY SYMPATHETIC RAMISECTION

His purpose, he said, was to give some ocular proof of the results of this operation He had read the criticisms of the method which had emanated from Britain and America, and he found that in the United States, which he had just visited, the operation was almost universally accepted Harvey Cushing certainly favoured the idea

Dealing first with the results he had obtained in animals, Mr Royle said that the immediate effect of cutting the sympathetic nerve was to cause vaso dilatation, in a thin subject this was evident as soon as the nerves were cut, whereas in a fat subject it might not become established for an hour or two Also there was a definite change in temperature after the section—in one case as much as 7° F The next observed result was a change in muscle tone, which was brought out in the cinematograph film Before operation the patient's reflexes were rapid and jerky, but the muscle tone, as described by Holmes and Walsh, disappeared after sympathetic ramisection The goat was a good animal on which to show these changes In a general way, too, the limbs from which the sympathetic nerves had been removed behaved differently from the limbs in which they were intact

A patient, whose leg after operation comported itself as if it had no tone at all, said that before the operation he was unable to relax, whereas now he could do so This meant that before being operated upon, if his leg went out into a position of extension the only movement was a reflex one, and when the reflex movement was elicited he was unable to let go It was useful to consider how muscle tone was controlled normally Under ordinary circumstances a person had no control of muscle tone, excepting as a concomitant of active movement, the eye could be opened or closed, but when open it remained more or less in the same position without intervention, it could not be made more fixed nor less fixed In lesions of the nervous system the patient might lose control over his phasic movement, secondly, he lost the power of letting go of his muscles In addition there was a release of function in the centres controlling movement and in those controlling tone If under ordinary circumstances we had no control over tone, then under these abnormal circumstances tone became an obstacle to movement And this affected all groups of muscles, not only the extensors, but, in spastic paralysis, the flexors also Mr Royle showed on the film one patient who before operation had no control over movement, but in 20 days thereafter showed considerable control In examining these patients he said it was important to distinguish between clonus and lengthening and shortening reactions

One patient whom he had had under control many years had previously had Stoffel s operation performed for the adductors and flexors of the knee, and for the peroneal group of muscles, but it had not given her balance The result given by ramisection within a month was much more satisfactory than the other procedures had given in the course of years, even though attempts at educating the muscles had been patiently carried out The defect was a congenital one

The next patient shown had such a useless right upper limb that he was unable to distinguish one sensation from another, and could not open and close the hand On the day following the operation, however, he was able to close his hand on the bandage

A further patient had considerable abductor spasm, and in addition to ramisection Mr Royle had lengthened the hamstring muscles Nothing had been done to the adductors, 12 months after operation the patient was able to walk without aid other than that of a stick.

A woman, aged 23, with congenital spastic paraplegia, showed extension of the foot and dorsiflexion in coördination with the knee The knee-jerk was brisk. Six weeks after bilateral sympathetic ramisectomy she was able to walk supported by two sticks; she had never walked before She could also balance

The subsequent history of this patient was interesting, said Mr Royle, in view of the work of the Russian *school. which had shown that removal of the* sympathetic made patients more able to resist fatigue This young woman had at first been able to walk only a few yards, subsequently she improved so that she could now walk for miles These patients were able to walk because something had been taken away which prevented inhibition Where contractures existed, his *plan* was *to* perform sympathetic ramisectomy on one side, dividing the hamstring muscles, lengthening the tendo Achillis and indeed doing whatever was necessary, at one sitting on one side. A boy on whom this was done was able six weeks afterwards to walk up and down stairs with little apparent difficulty, and could run Often the operation brought about a beneficial change in the condition of the patient's bowel · many had been obstinately constipated, the bowel was dilated, and *motions usually had to be stimulated by* an aperient. After ramisection however, daily evacuations took place without such aid

The latest application of the operation, so far as he was aware, was to *Hirschsprung's disease.* Wade of Sydney, had operated upon a boy 10 years old with this condition, who had never had a normal motion enemata *or* aperients always being needed. After leaving hospital he had a normal motion every day without an aperient In such a case the operation differed from that for deformity of a limb in that the rami divided were those going to the inferior mesenteric ganglion, and the operation was done on one side only In America he had been told that no result was obtained from removal of the abdominal sympathetic on one side, but this he thought was because the operators did not go high enough *Experimental* mesenteric ramisection in the goat had resulted in an increase in the normal number of its motions

A boy, aged 16 with congenital spastic paraplegia, had never walked, but tenotomies had been performed on him. His knee was somewhat flexed at the knee After ramisection his first attempts at walking showed the knee still flexed Six months after ramisection he was bowling at cricket, and the film depicted him playing tennis

When he first introduced this operation for spastic paralysis said Mr. Royle, he had the idea that spastic chorea and athetosis were contra-indications, but he had not tried it for those conditions. He now showed films of cases of chorea.

The first was that of a little boy whom he had had under observation for some years The boy had gone to live in another Australian city and had come back four years later with the same degree of spasticity in the hands and intense choreiform movements After operation there was very definite improvement, steady movements could be performed, and the function of the limb was greatly enhanced

A girl, aged 19 with the same condition was unable to sit up unsupported In her the operation restored power of inhibition of voluntary movements by taking *the tone* out of the muscles Four weeks after the operation she was able to open and close her hand well and to grasp objects

A young woman, with spastic diplegia and chorea was able to walk only a few yards After operation she was able to balance and to walk 100 yards

A boy shown had previously had tenotomies done and a fusion operation arthrodesis of the ankle-joint After operation, when the boy had been home a week he was able to walk quite passably, though he had stiff ankles

Mr Royle said that he showed the next picture as an answer to those who stated that the results achieved were due to education or re-education of the musculature This was a child aged 18 months Before the operation the child was unable to use its *right hand* Four weeks after ramisection the child was shown reaching out and grasping objects Another child with a defective left hand showed efficient pronation and supination a few days after the operation

The final case shown was one of post-encephalitic rigidity following encephalitis lethargica

The patient was a man aged 27, who was admitted to hospital in July, 1924. The family history showed no hereditary taint, and as a child he was healthy He gave three years of active service in the war He was quite well until a fortnight before the Christmas of 1923, when he felt weak while at work, and had to go home. After three days in hospital he became unconscious and delirious The delirium lasted four days He was able to leave the hospital a fortnight later, but felt weak in all his limbs, chiefly in the left upper and lower ones He was also very constipated Gradually his condition got worse and his facial expression became more and more fixed. On his admission to hospital speech was slow and monotonous There was no disturbance of sensation. The left upper extremity was held fixed, and was adducted across the chest, and there appeared to be rigidity of the left leg There was a complaint of generalised weakness and stiffness of movement, the latter all being slowly performed though there was no actual paralysis *nor* tremors Knee-jerks were exaggerated, and the plantar reflex was flexor The abdominal and cremasteric reflexes were active The pupils were equal, but reacted sluggishly to light and accommodation. Tests for syphilis, both of blood and cerebro-spinal fluid, were negative When out of bed there was evidence of considerable motor disability. Injections of hyoscine relieved the muscular rigidity within four hours, but in two or three days the effect of this had gradually worn off Saline injections—given to exclude the factor of suggestion—had no influence on the rigidity. In January, 1927, he was strikingly better than before the operation, he was now able to sit erect, and both arms assumed a normal posture, the facies was more mobile and lively, *though there was still* a tendency for the expression to slowly "fade" Movements of both upper extremities were now comparatively free at the proximal joints, though piano-playing movements were poorly carried out The gait also was now active and lively, and he could ascend and descend stairs with little difficulty The bowels were now evacuated daily without help

The invitation of the PRESIDENT to discuss the contribution met with no response. In thanking Mr Royle for his communication Dr. Pugh referred to the untimely death at the age of 26, of his brilliant collaborator Dr Hunter.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

A MEETING of this Society was held on April 29th, SIR HUMPHRY ROLLESTON, the President, in the chair

DR REDVERS N IRONSIDE opened a discussion on the

Prophylaxis of Neurosyphilis

He dealt first with the efficient treatment of primary syphilis while the Wassermann reaction in the blood was still negative It was known that the nervous system was, or might be affected with greater frequency and at a much earlier stage than was formerly supposed, so that it behoved the neurologist to concern himself not only with established disease and its *treatment*, but *also* with the changes induced in the organism from the time of infection. Eighteen years ago Ehrlich had given the profession a spirochæticide. salvarsan Had there been a decrease since then owing to more efficient treatment of the primary infection in *the* frequency of neurosyphilis? It was rational to believe that the incidence should be less but he held that no definite statement was possible at the present time, for observers were dependent on personal impressions rather than on definite statistical evidence. There were certain indications that neurosyphilis was less frequent, including the evidence given in the statistics of a large insurance company (Metropolitan Life) which, in 1917, showed a rate of 16 6 per 1000 dropping in 1922 to 13 1 per 1000 What he thought could be definitely stated was that syphilis of the nervous system was nowadays seen earlier and was less severe in its manifestations. It was a common*place* among neurologists that patients with late neurosyphilis gave a history of little or no treatment of the primary disease The prophylaxis of neurosyphilis would appear generally to depend on effective destruction of the spirochætes, if possible before the infection had become generalised Efficient management of the primary stages must include thorough physical examination and a study of the cerebro-spinal fluid, Lumbar puncture had great importance in the diagnosis of syphilis per se, it was indispensable as a guide to treatment and to cure or arrest By 1915 it had been shown conclusively that early neurosyphilis could be recognised by special examination of the fluid before secondary symptoms appeared It had become apparent that there was no necessary correlation between symptoms and changes in the spinal fluid, a person with serological evidence of severe neurosyphilis might have no symptoms in his central nervous system, while one with severe symptoms of pathological destruction might have a normal fluid The fact that the spinal fluid might be the sole guide to an otherwise symptomatic and hidden involvement of the central nervous system justified routine use of the test in all cases at the proper time during their course

Turning to the recognition and indications for treatment of latent syphilis, Dr Ironside advised the examination of the cerebro-spinal fluid in all cases of latency Complete examinations should be made biennially over a period of 10 or 15 years, this was a fair compromise with the patient When the cerebro-spinal fluid was normal the case should be left alone—though kept under control—provided the patient had had efficient treatment When the fluid was positive treatment should be given energetically with all the means available The incubation period of clinically manifest neurosyphilis ranged from three months to over 20 years If a graph were made of it, a rise would be seen during the first year owing to acute syphilitic meningitis, meningomyelitis and cerebral syphilis There was a further rise 6 to 11 years later, due to the fact that tabes and general paralysis of the insane had their greatest incidence at this length of time after infection Thus the conception had arisen of acute syphilis of the nervous system, a virulent process, in which the patient's resistance was relatively low, and chronic syphilis of the nervous system characterised by mildness of the early lesions, a long latent period indicating a high degree of resistance of the host, the chronicity of the commoner forms, and the absence of acute constitutional reaction, such as fever

Finally Dr Ironside touched on the problem of the syphilitic parent The Hoffmann rule, which crystallised conservative European opinion, called for three years of treatment with novarsenobenzol and mercury and two years of symptom-free observation before marriage In the light of modern work this would include a repeatedly negative Wassermann reaction in the blood and cerebro-spinal fluid from the end of the first six months of treatment

Discussion.

Dr **PAUL FILDES**, speaking of the early diagnosis of neurosyphilis said that for years it had been known that a large proportion of cases of syphilis in the early stages even before the Wassermann reaction had become positive, had variable degrees of meningitis as was shown by the presence of spirochætes and possibly by a positive Wassermann reaction in the cerebro-spinal fluid The extraordinary thing about these cases of meningitis was that they seldom exhibited any clinical signs of a lesion of the central nervous system, and it was still unknown what was their subsequent fate He knew that 10 or more years ago hundreds of men in the navy underwent lumbar puncture in the primary stage of syphilis Could not some information be forthcoming as to what had happened to them ? He also inquired whether it might not be possible to increase the efficiency of antisyphilitic drugs Salvarsan did not penetrate into the brain, and so could have no action in those cases in which the spirochætes were lying in the parenchymatous tissue of the brain According to some authorities, it was possible to obtain a profusion of antibodies in serum passing through the cerebral capillaries into the brain by the intravenous injection of urotropin at the same time as the antitoxin Certainly there seemed to be some evidence that the permeability of these vessels could be affected by urotropin The difficulty with salvarsan compounds was that they were excessively toxic, and it was possible that some of the severe cerebral reactions that were seen in cases of syphilis of the brain after salvarsan treatment might be due to traces of the salvarsan getting into the brain, owing to the greater permeability of the cerebral capillaries arising out of the inflammation

Mr **DAVID LEES** agreed in emphasising the need for repeated clinical examination of the central nervous system He complained of colleagues in other specialties that they were apt to look lightly on syphilis and neurosyphilis, with the result that disasters sometimes occurred General practitioners also undoubtedly under-treated rather than over-treated these conditions

Colonel **L W HARRISON** laid stress on the necessity for using arsenobenzol in combination either with mercury or bismuth, and giving the two drugs simultaneously The absence of clinically manifest neurosyphilis among thousands of cases treated at his clinic he put down to this combined form of treatment

Dr **WILFRID FOX** referred to the unpleasantness to the patient of the withdrawal of cerebro spinal fluid The whole subject, particularly under the prolonged period of control and frequent re-examination called for, bristled with difficulties

Dr **H M HANSCHELL** referred to some work done upon trypanosome infections, in which the dose of arsenic given by intrathecal injection was regulated according to the weight of the brain and spinal cord of the animal He had applied this principle in treating cases of G P I, and had found that the patient could stand as much as 6 mg of novarsenobenzol placed right into the theca It did not cure the G P I, but it had no adverse effect

Dr **DAVID NABARRO** said that he had had success in the treatment of G P I by intrathecal injection of salvarsanised serum via the cisterna magna

Mr **C H MILLS** was surprised to hear members reverting to intrathecal injections of salvarsanised sera, he thought these had been tested in the past and had been condemned.

Mr **WANSEY BAYLY** did not quite understand why marriage should be advised against for so long a period as three, four, or five years, especially if the wife was treated, as a precautionary measure, during pregnancy He always allowed his patients to marry after a year, and had never known of any unfortunate results

Dr **IRONSIDE** briefly replied on the discussion, which, from the point of view of prognosis and treatment, will be continued at the next meeting

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BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY

AT a meeting of this Society held on May 5th, Dr **E RIVAZ HUNT**, the President, in the chair, Mr **F. E FEILDEN** gave an address on the

Treatment of Urethral Stricture

The condition, he said, is serious, but fortunately not so common as it was a comparatively few years ago For its efficient treatment it is necessary to realise that the bulb, where most strictures occur is the widest portion of the urethra and the external meatus the narrowest Many strictures can be cured permanently by means of a Kollmann's dilator The stricture may be of inflammatory traumatic, or congenital origin, occurring in this order of frequency Those due to gonorrhœa are not uncommonly multiple A single stricture in the penile urethra is rare, and except after operation strictures are seldom found in the prostatic urethra The occurrence of 75 per cent of strictures in the bulb is probably partly because it is the most dependent part of the urethra which causes gonorrhœal discharge to collect in it and partly because the full force of micturition is directed against this part of the canal, so that trauma may be produced, leading to infiltration of the mucosa When the narrowing has progressed sufficiently to cause obstruction the force of the urinary stream increases the chronic inflammatory reaction In support of this view it may be mentioned, said Mr Feilden, that in cases of multiple stricture the narrowest stricture is situated nearest the bladder. Excision should be reserved for cases in which the condition is due to trauma Probably the incidence of stricture could be reduced if every case of gonorrhœa, before being discharged as cured, were submitted to full dilatation

Greater use should be made of the urethroscope continued Mr Feilden, some cases cannot be cured without its aid A gentle hand is most important in passing urethral instruments Unfortunate results are produced not so much by the introduction of organisms as by avoidable trauma of the urethral mucosa Most strictures are amenable to treatment by dilatation As regards silver instruments, the smaller sizes should be avoided, for they are likely to produce false passages Silk-web bougies should be used up to 18, then steel up to 12/15, after which the stricture should be dilated up to 45 Charrière with a Kollmann. In chronic retention, to avoid disaster rapid evacuation of the bladder should never be allowed Strictures ought never to be forced, but some can be rapidly dilated at one sitting Internal urethrotomy is a most satisfactory operation and often no further instrumentation is necessary after internal urethrotomy and full dilatation If there is marked urinary infection or renal insufficiency, drainage of the bladder should precede the urethrotomy In impermeable strictures or those resulting from trauma, Wheelhouse's urethrotomy is the method of choice, and it should be done in all cases of stricture of the bulb associated with periurethritis, periurethral abscess, extravasation of urine, or severe cystitis In elderly patients with recurring epididymitis bilateral vasectomy may be done with advantage A malignant prostate closely resembles a stricture, as there is no residual urine in either case Tabes by producing atony of the bladder may be the cause of an apparent acute or chronic retention The infection behind the stricture must be treated concurrently with the stricture

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ROYAL MEDICO-CHIRURGICAL SOCIETY OF GLASGOW

A MEETING of this Society was held on April 8th, Dr. J M COWAN, the President, in the chair.

Dr JAMES ADAM read a paper on

Bronchiectasis of Inhalatory Origin

He said that for diagnostic purposes he preferred to inject lipiodol through the glottis after passing a gum-elastic catheter between the cords with the aid of a Jackson laryngoscope This took only a few seconds to put in position With older children and adults it could be done with the patient sitting down, the larynx being cocainised: with young children no anæsthetic was necessary and the patient was supine

After insisting on the need for careful inquiry as to the patient's history and for X ray examination before and after injection of lipiodol, Dr Adam gave his experience of nine cases of bronchiectasis associated with nasal sinusitis and of four post-pneumonic cases The former group entirely or mainly affected the right lung Nasal sinusitis as a cause of bronchiectasis had been entirely overlooked in this country though not in America and bronchiectasis of this origin was preventable by prompt nasal investigation and treatment It was possible, he said that fatal termination of bronchiectasis by cerebral abscess was due to metastasis from the nose as well as from the lung

Dr Adam concluded by giving the results of treatment by nasal operation, bronchoscopic suction, and lavage, and by two-hourly inversion Suction was important at the beginning of treatment; the value of lavage was open to doubt, at any rate in many cases Of the value of systematic inversion there was no doubt whatever.

Prof LEONARD FINDLAY, speaking on the

Ætiology and Diagnosis of Bronchiectasis in Childhood, said that at first sight it might seem one-sided to consider only the condition as met with in children, but it should be remembered that in any large series of examples of chronic pneumonia and bronchiectasis the majority of the patients were children or had apparently developed the disease during childhood. The symptoms were very variable, as he showed by cases in which diagnosis had only been made certain either by intratracheal injection of lipiodol or at autopsy. His experience coincided with that of Armand Delille—that there were three types of cases: (1) cases of bronchiectasis with typical signs and symptoms; (2) cases with suggestive symptoms, but no bronchiectasis; and (3) cases of bronchiectasis with neither signs nor symptoms. Consequently he had no hesitation in saying that not only for the diagnosis of bronchiectasis but also to get correct information about its extent, the injection of lipiodol was essential, and he considered that in pulmonary diagnosis the use of lipiodol was the greatest advance since the introduction of radiology.

Prof Findlay gave an analysis of the signs and symptoms of 25 cases in which the diagnosis was confirmed either during life with lipiodol or at autopsy. As a rule the children were undersized but well nourished Clubbing of the fingers was present in 11 cases, and was related more to the extent of the disease that to its duration Cough was present in 24 and absent in 1. Spit was present in 17 cases and absent in 6; in all of these 6 the disease was of less than 18 months' duration In only 8 cases was the sputum fœtid. Amphoric breathing was audible in 10 cases and whispered pectoriloquy in 7 As in all previously recorded series the left lung was most frequently the seat of the disease; in 16 cases the left lung alone was involved; in 4 the right lung alone, and in 5 both lungs were attacked. In no case was the apex alone the seat of the disease Prof Findlay considered that the disease was caused by, and in fact simply part and parcel of, chronic pneumonia, as had been suggested by Corrigan, though pleural adhesions, to which Hamilton had first drawn attention, also played a part In his post-mortem material both chronic pneumonia and pleural adhesions had invariably been present. The conditions could be traced in all but three of his series of cases to some acute pulmonary disease such as primary broncho-pneumonia, or broncho-pneumonia secondary to the infectious fevers or pleurisy In three cases the condition had set in insidiously

Dr STANLEY GRAHAM dealt with the

Technique of Intrapulmonary Injection of Lipiodol. Lipiodol, he said, was a viscid vegetable oil containing approximately 40 per cent iodine combined with it—not merely in solution Ten years ago, in Sicard's clinique, a patient was receiving intramuscular injections of lipiodol into the buttock for therapeutic purposes and a chance X ray examination revealed the fact that this iodised oil was impervious to the X rays This had led Sicard and Forestier to investigate the possibilities of its use for diagnosis. The iodised oil could be introduced into the trachea either by means of a tube through the glottis (laryngeal syringe or bronchoscope) or by a needle inserted through the cricothyroid membrane. In adults the use of the laryngeal tube might be comparatively simple, but in children, in his experience, it was undoubtedly not the method of choice In a child the glottis was small, and furthermore, it was exceedingly difficult to get the pharynx and larynx sufficiently anæsthetised to permit of the operation The same objections applied, of course, to the use of the bronchoscope in children In adults, good pictures could undoubtedly be obtained, but scarcely, he thought, as good as those obtained when the lipiodol was introduced through the cricothyroid membrane In any case, in children a general anæsthetic was advisable for psychical reasons, apart altogether from the physical discomfort of the operation In older children it was quite possible by means of local anæsthesia to insert the needle into the trachea through the cricothyroid membrane, but the parts were very soft and it was difficult to get the child to avoid any movement or act of swallowing, so that the site of operation might be kept at rest With the child under an anæsthetic, however, it is comparatively easy to enter the trachea through the cricothyroid membrane The needle he had found most satisfactory was one curved and mounted with a flange like a tracheotomy tube The stilette might project beyond the point of the needle when it had a blunt end, just as in an ordinary trocar and cannula, but the form of needle employed in lumbar puncture was better, here the needle was sharpened at an angle of 45° and the stillette similarly angled to become flush with the needle point The size of the needle was of importance It should be large enough to permit of the oil being forced through the lumen

Lipiodol was a very viscid fluid and should be warmed to body temperature as this facilitated its flow through the needle Indeed if this precaution of warming was not taken it would be found impossible to force it through the usual size of needle as shown in the slide, especially when it was curved in the shape of a tracheotomy tube Therefore a syringe which could be heated was to be recommended As great pressure was often needed, a device whereby the piston could be screwed home was convenient

Before administering the anæsthetic, the bronchiectatic cavities should always be emptied as completely as possible by inverting the child and inducing him to cough This was important, for two reasons First, it permitted the more ready and complete filling of the cavities, thus producing a better and more clear-cut picture, and, secondly, it obviated the coughing up of large amounts of sputum during the operation The child being completely anæsthetised, the thyroid cartilage was grasped between finger and thumb of the left hand, the cricothyroid membrane was then identified and the needle inserted in a downward and backward direction With a large needle the operator learnt immediately whether it was in the trachea from the rush of air on withdrawal of the stilette, just as at the introduction of a tracheotomy tube With a smaller needle the lumen was very readily blocked with the purulent secretion in the trachea so that no air could pass It has been found, however, that this point could be readily settled by attaching a syringe and applying suction Where a needle had entered the lumen of the trachea air could be readily withdrawn and also introduced After making sure that the needle was in the trachea, 1–2 c cm of 4 per cent novocaine was introduced to lessen the tendency to cough Then the syringe filled with lipiodol (15–18 c cm) was attached and the oil slowly injected The entrance of the oil might be aided by elevating the shoulders slightly while it was being injected In his experience it was unnecessary to turn the child on its side to facilitate the flow into one or other lung, as the bronchiectatic portions of the lung seemed to have an affinity for the oil, perhaps owing to diminished expiratory efforts and resistance in the affected bronchi Immediately after injection was complete an X ray photograph of the chest was taken, and it was therefore advantageous when possible to carry out the whole procedure in the X ray department; in the case of children an instantaneous apparatus was essential for the production of sharp pictures

It was very important that enough lipiodol should be injected At least 18 c cm were required, and often better results are obtained by giving 30 c cm As a rule, some of the lipiodol was coughed up and swallowed, but enough would remain in the bronchial tree to demonstrate any abnormality

The method was almost free from danger, and Forestier had recently said that he had never seen or heard of any fatal accident Dr Graham himself had seen only two accidents In one of the earlier cases, before the necessity was understood of making absolutely sure that the needle was in the lumen of the trachea (by attaching a syringe and applying suction), some of the lipiodol was injected into the surrounding tissues and could be seen on X ray examination as an opaque irregular mass in the upper part of the chest In the other case the patient (a boy of 3 years) had a violent fit of coughing on recovering from the anæsthetic and a severe subcutaneous emphysema was produced It had been found that this coughing could be controlled to a certain extent by a hypodermic injection of morphia, and this was advisable if it was severe In neither case did the patient receive any permanent danger The subcutaneous emphysema cleared up very quickly, and in the first case the oil would presumably be absorbed through time and the patient was in no way inconvenienced

Although some writers had reported iodism following the use of lipiodol, he had not observed it As much as 30–38 c cm could be given to a child without untoward effects Presumably most of it was coughed up and, at any rate, the absorption of the oil from the site of the bronchiectasis must be very greatly diminished

Discussion

Dr J B MACKENZIE ANDERSON said that his experience of bronchiectasis had been mostly confined to adults, but he agreed with Prof Findlay that the great majority of cases gave a long history and probably started in the early 'teens Most of his patients had been males, the proportion being roughly 5 to 1 An early history was usually obtained of tuberculosis, pneumonia, pleurisy, or empyema Of two cases in elderly people one was associated with a neoplasm and the other with an aneurysm He had no personal experience of lipiodol and was inclined to think that its use was limited, as in most cases the clinical picture was fairly typical and the use of lipiodol unnecessary

Dr W S SYME said that his experience at the Throat and Nose Department of the Western Infirmary and elsewhere suggested to him that there are two quite distinct types of bronchiectasis The first was due to the inhalation of a foreign body Usually one single large cavity was formed, doubtless by ulceration of the wall of a bronchus, as was indicated by the presence of granulations For these the appropriate treatment was lavage of the cavity after removal of the foreign body where it could be found In some of these cases he had no doubt the foreign body was derived from the purulent discharge from an accessory nasal sinus, and often improved considerably when the sinus was treated The second type of case was that referred by physicians In these cases there were usually a number of small cavities and the condition could not suitably be treated by lavage Dr Syme was convinced that disease of sinuses was very often overlooked, especially in children, in whom it was much more common than was generally supposed It should not be too readily concluded that the discharge in a child's nose was due to adenoids A careful examination, if necessary by proof-puncture, which was an easy procedure even in quite young children, would often elicit the presence of antral suppuration

ERRATUM —In our report last week of a discussion on the Medical Aspects of Hæmaturia in the Section of Urology, Royal Society of Medicine, the name of the speaker who immediately preceded Sir Thomas Horder's reply should have been given as Mr Cyril A R Nitch We regret the error

Reviews and Notices of Books.

Surgery of Neoplastic Diseases by Electrothermic Methods

By George A Wyeth, M D With a Foreword by Howard A Kelly, M D Baltimore New York Paul B Hoeber, Inc 1926 Pp 298 $7 50

In this interesting monograph Dr Wyeth gives an account of the electrothermic methods in surgery and describes his own experience in their use for the treatment of neoplastic diseases The electrothermic methods are those in which heat, generated in the tissues by high-frequency oscillatory currents, is used for the excision or destruction of abnormal tissue Of these methods that which is most familiar to workers in this country is the treatment known here as diathermic coagulation or cauterisation. Dr Wyeth describes two other methods In one of these the heat generated by the current is insufficient to coagulate the abnormal tissue, instead, it deprives the latter of water and dries it This method was originally described by Dr W L Clark, of Philadelphia, and named by him "electrodesiccation" It does not seem to have been adopted in this country, although it is widely practised in the United States In the third method an oscillatory current is used to cut tissue and play the part of a scalpel; in addition, the current coagulates the divided surfaces to a slight depth and seals the minute vessels This method has been perfected by Dr Wyeth and practised by him during the past five years The first three chapters deal with the history of the medical uses of high-frequency currents, the production of these currents, and the question of terminology Dr Wyeth prefers the term "endothermy" to surgical diathermy, and he calls diathermic coagulation "bipolar endothermy" Electrodesiccation he prefers to call "monopolar endothermy," because a single (active) electrode is used without an indifferent electrode The use of the oscillatory current for dividing tissue is termed "treatment by the endotherm knife" by Dr Wyeth, the endotherm knife being the active electrode

In the fourth chapter the author describes the principles of monopolar endothermy, indicates its uses, and describes some cases which he has treated by this method In Chapter V the subject of bipolar endothermy (diathermic coagulation) is treated in a similar manner The remaining five chapters, which constitute about three-quarters of the entire book, deal with treatment by the endotherm knife The idea of utilising high-frequency oscillatory currents for cutting tissue did not originate with Dr Wyeth, but he has perfected the method, devised special apparatus for generating the most efficient current for the purpose, and obtained a lengthy experience in its use He employs a single needle as the active electrode (the endotherm knife) and uses it for the excision of malignant and innocent neoplasms of the skin and of the mucous membranes of the upper air passages, rectum, bladder, and female genitalia The amputation of the breast and removal of the axillary glands by its means is described The details of a case of carcinoma mammæ are given; the diagnosis of adenocarcinoma was made by histological examination, and the breast pectoral muscles, and axillary glands were removed by the endotherm knife There was no evidence of shock after the operation and the patient was out of bed on the third day There seems to be little doubt that the employment of the oscillatory current for cutting tissue furnishes the surgeon with additional power especially in the treatment of malignant disease Although it does not stop the escape of blood from the vessels of appreciable size the capillaries and lymphatics are sealed as they are cut Hæmorrhage from larger vessels is stopped by securing the divided ends in pressure forceps and coagulating them by the diathermy current Incisions made by the cutting current heal by first intention, and there appears to be little or no shock after the operation. Dr Howard Kelly, who has written a foreword to the book, has adopted the new method and states that it "bids fair to effect an extensive readjustment of our whole surgical technique" There is much in Dr Wyeth's book that will interest the student of neoplastic disease It is stated that the compilation of cancer statistics and the description of results of treatment are of limited value unless they are accompanied by information regarding the degree of malignancy, derived from histological structure and the degree of differentiation of the cells Four grades of malignancy are described Dr Wyeth speaks highly of the value of electrodesiccation in the treatment of leukoplakia An interesting case of epithelioma of the eyelid treated by the same method is described, ectropion did not occur and there was no recurrence in 18 months

The book is deserving of careful study and the author has conducted original work of no little value. The illustrations are good and the diagrams helpful

High Vacua

By G W C Kaye, O B E, M A, D Sc, F Inst P, Superintendent of the Physics Department the National Laboratory London Longmans, Green and Co, Ltd 1927 Pp 175 10*s* 6*d*

The first five chapters of this book are devoted to a consideration of early types of exhaust pumps and the technique of how to deal with a vacuum when it appears, one chapter being devoted to the question of sealing metals to glass Then comes a section on the modern pumps with their high speed action, good illustrations and descriptions of many types being given A brief chapter is devoted to absorption methods of exhaustion, the best of which is that discovered by Sir James Dewar—namely, the absorption of charcoal at the temperature of liquid air In many cases a good oil pump combined with the charcoal and liquid air absorption gives very speedy action The final chapters are devoted to a description of how high vacua are measured, and how the speed of action of pumps can be determined

The book should prove useful for reference purposes, since the original publications in which the separate inventions are described are nearly always mentioned.

Regional Diagnosis in Brain Affections

Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord By Robert Bing, Professor in the University of Basle. Third edition, translated from the sixth German edition by F S Arnold, B A, M B, B Ch Oxf. London. William Heinemann (Medical Books), Ltd 1927. Pp 204 15*s*

Dr Robert Bing's compendium is now so well known to English as well as continental students that further recommendation is almost superfluous On various occasions we have reviewed it in these columns, and need therefore say no more than that this third English edition can be put with confidence into the hands alike of student and practitioner, it embodies in readily assimilable form present-day teaching in regard to neurological diagnosis The basis of clinical neurology is the anatomy and physiology of the nervous system, without which the study of nervous disease is vain and at the same time uninteresting With it, cases become illuminated and therapy less empirical If this introduction is utilised as it deserves to be it cannot fail to provide the physician with a working knowledge of neural mechanisms in health and disease that he can apply to clinical practice with advantage to himself and correspondingly to his patients The clarity and simplicity of the numerous diagrams enhance the value of the text Incidentally, we note that the German legends in some of the illustrations have undergone translation, but not in all

WALL-MAPS OF THE C N S

Bilder zur makroskopischen Anatomie des Gehirns und zum Bahnenverlauf; Erlauterungen zur 2 Auflage der Icones Neurologicæ By V. STRUMPELL und JAKOB Edited anew by FRIEDRICH MULLER and HUGO SPATZ, Munich With 45 illustrations Munich J F. Lehmanns 1927

WE have received a new series of the Icones Neurologicæ or wall-maps of the central nervous system, designed for teaching purposes in schools of anatomy and neurology A small explanatory brochure accompanies them, with reproductions of the maps on a much reduced scale and appropriate textual explanations The wall-maps are admirable alike for their relative simplicity and for the distinctiveness of their colourings, and as far as we have noted critically their accuracy is unimpeachable The terminology, as is just, is Latin Any teaching school possessing these Icones can congratulate itself on a labour-saving acquisition of a most valuable kind.

CHILD WELFARE

The Health of the Child of School Age By Various Authors With a foreword by SIR THOMAS OLIVER, M D, F R C P London Humphrey Milford, Oxford University Press. 1927 Pp 204 6s

THIS book consists of a series of 10 lectures recently delivered to the public at the Institute of Hygiene All the writers are authorities on the subject with which they deal, and the lectures, taken together, form a valuable introduction to the problems of school children's health To mention a few chapters only, the prevention of nervous disorders is discussed by Dr Risien Russell, Dr L R Lempriere deals in a most scientific and convincing manner with the dietetic problems of a school, and Dr C E Shelly brings out many points of interest on the incidence of infectious disease The other articles maintain their interest throughout, and the book should be of real benefit to parents and to schoolmasters, particularly in enabling the former to obtain a sympathetic understanding of the difficulties with which the headmasters are often confronted

Nutrition Work with Children By LYDIA J ROBERTS, Assistant Professor of Home Economics, University of Chicago University of Chicago Press 1927 Pp 394 17s 6d

THIS book gives an account of the theoretical and statistical aspects of nutrition in childhood, and of the work which has been done in American schools in investigating malnutrition and in educating the public on this subject Various methods of measurement and standardisation are discussed, and a description of the Pirquet system is given It will probably appear to the medical reader that the influence of alimentation on the body-weight is over-estimated, while that of endocrine activity is entirely neglected An interesting account is given of attempts which have been made to educate school-children in the selection of their own diets As applied to normal children, the methods employed should be of considerable value, but it is doubtful whether cases of true malnutrition are best dealt with by so uniform a régime, and whether the author's enthusiasm for increasing the milk allowance of *all* these children is not misplaced

JOURNALS

THE JOURNAL OF INDUSTRIAL HYGIENE for April contains two articles of some moment In the first Dr W Watkins-Pitchford deals with silicosis as seen among gold miners and changes produced in it by legislative and administrative efforts, summarising his work at Johannesburg over many years Silicosis is the name now given to miners' phthisis as indicative of the origin of the disease which also attacks other workers exposed to silica dust such as stonemasons metal grinders and potters; it will also attack the ordinary population in a country of dust storms composed of silica particles Dangerous particles of silica dust vary in size from 0 25 to 10 microns, larger or smaller particles are not phagocytosed by macrophage cells, which also engulf tubercle bacilli Silica dust causes fibrosis in the lungs, which condition may lie latent for some years to be precipitated by an infection Shortness of breath and a tendency to obesity indicate the inception of silicosis, which, by itself, is seldom serious Pulmonary tuberculosis and silicosis are intimately related one helping the other, and when associated are far more fatal than either alone Pigmentation of the lungs always accompanies silicosis and precedes the formation of grey fibrous tissue in nodules The presence of fibrous nodules can be detected by radiography, which is more accurate than clinical examination When tuberculosis is superadded, the heart shadow takes on the asthenic or vertical type The average time for simple silicosis to develop in a Rand miner is now about 10 years, which is longer than before steps were taken to minimise the dust hazard and is inversely proportional to the intensity of exposure to silica dust Great necessity exists for more rigid exclusion from underground of all possible sources of tuberculous infection, to day native labour supplies such a possible source Natives when employed as long as Europeans exhibit the same tendency to develop silicosis but are far more prone to acquire simple tuberculosis Three stages in the disease, ante-primary, primary, and secondary, are recognised for compensation purposes, according to the presence of impaired capacity for work and of tuberculous infection The precautions adopted by mechanical means to suppress the dust hazard and by medical means to exclude the predisposed and early cases are described, and the favourable results attained are explained The struggle against miners' phthisis on the Rand as here told makes an interesting story —In the second article Dr W I Urquhart reports a series of experiments on animals to ascertain how death is produced by electric shock Apparently death may be due to primary cardiac failure, or to primary respiratory failure, or to a combination of both The current applied to the brain causes, by intense stimulation, generalised muscular contraction, when it is broken, a condition of profound paralysis or block follows in the respiratory, vagus, and vasomotor centres No histological destructive changes are associated with the block, which may pass off if life is maintained by effective artificial respiration until reflexes and the normal rhythmic discharge of respiratory impulses return Much, however, depends upon whether gross damage has been done to the brain or spinal cord by charring at the point of application of the electrodes The conclusion is drawn that, in cases of unconsciousness after electric shock, artificial respiration should be continued until there is evidence of death in cooling of the body or in the onset of rigor mortis

Reports and Analytical Records.

BOTTLED PALE ALE

(MATTHEW BROWN AND CO, LTD, THE BREWERY, PRESTON)

THIS ale was remarkably brilliant, free from any deposit, and the condition and palate left nothing to be desired The brewing operations obviously had been carried out on sound lines and before being bottled the beer was filtered and carbonated On analysis the following results were obtained —

Specific gravity of wort before fermentation		1045 4°
Present specific gravity		1008°
Alcohol by volume		4 8 per cent.
Extractives (total soluble matter)		3 83 "
Consisting of	Mineral matter	0 32 "
	Protein	0 30 "
	Carbohydrates, &c	3 12 "
Acidity as acetic acid		0 11 "

The ale is free from added sulphurous acid and other preservatives

HE LANCET.

DON: SATURDAY, MAY 14, 1927

MPLOYMENT OF MARRIED WOMEN

Married Women (Employment) Bill. which an untimely end in the House of Commons 20th, was of interest to the medical profession least two direct points of view. It concerned number of medical women now engaged in ent and municipal service on contracts rminate automatically with marriage, and, the arguments which secured its rejection nly of a medical character Both the mover nder of the motion for rejection made great h the disabilities of pregnancy which they l to consider not only the natural, but the le result of marriage One speaker even that "in normal cases a woman was not ent a few years after marriage as before," nded us portentously that the sexes were not all respects The Government spokesman, NALD MCNEILL, elaborated the same point, nplained that supporters of the Bill were ng "enormously" the sickness risk and the discontinuance of service by employing women, with a corresponding "immense efficiency The one medical speaker in the Dr GRAHAM LITTLE, found himself unable rt these gloomy prognostications and, stating new of no medical authority for the arguments ld the House that the universities of this had found it perfectly practicable to make nction whatever between the sexes in the of marriage But he implied and correctly, a concerning the sickness-rates of married as compared with single women and men under similar conditions, are very hard to

days when the largest educational authority orld gave women teachers the free choice ing after marriage,[1] it was found that the of days absence for married women was num, as against 8 2 for single women and en It may be noted that the differential st married women was found exclusively er and upper extremes of age, for between 5 years of age married women actually s absence than single As for interruptions gnancy, the last census revealed that the mber of children in the professional man's 0 98 The married woman Civil servant contribute double her quota of disability nously dislocating the work of a well-epartment The bogy of the woman official l by recurrent pregnancies and a "lot of n" need not be taken too seriously It was teaching profession that very few women than two children attempted to remain d medical women in a similar situation ave up practice, at any rate, until the at school Mothers are at least as aware ue to young children as are Members of Parliament Even if it could be established that a substantially greater sickness risk has to be debited against the married women, it by no means follows that the last word has been said on the efficiency of the woman as worker Marriage has been described as a "battlefield"; it is certainly an education, and anyone can imagine that this education may often be an asset This is especially true of positions where the woman official has to deal with other wives and mothers in some educational capacity, either as a teacher or in the public health service Working women not unnaturally prefer to deal with one of their own status on matters affecting married life, and they listen more readily to advice in respect of children from a woman who has, or who might have had, children of her own Such an attitude on the part of a large proportion of the public is not a negligible factor in the conduct of great services which ultimately depend for their success on the coöperation of the public It may further be argued that working mothers are not the only persons who would benefit if the atmosphere of some schools and departments staffed by single women, which tends to be too spinsterish, were mitigated by a leavening of the mated.

The point of view of the woman herself was well put in the debate by Mr. PETHICK-LAWRENCE He spoke feelingly of the sad waste entailed on both sides when an expensively trained and experienced officer suddenly found herself thrown out of employment and deprived of pension rights just at the time when the most valuable earning period of her career was beginning This is an aspect which closely concerns medical men who have given their daughters a costly education for which they and the community are entitled to expect some return Recently the Durham County Council has dismissed a woman medical officer, appointed last August, on the sole ground that she has since married. no question of resignation on marriage having arisen at the time of her appointment This sort of prophylaxis against possible inefficiency can hardly be defended In other departments of life a married woman is now at liberty to use her gifts in any manner she and her husband please, and (as Sir HENRY SLESSER suggested) it is difficult to see why the established services should remain the one exception When the matter next comes before the House it is to be hoped that broader and more scientific views will prevail.

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THE ENDOTHERM KNIFE

BLOODLESS surgery was the expression formerly applied to the manipulation of bones and joints under anæsthesia, no incision being made in the skin. The term has made a wide appeal to the public, whose dread of "the knife" is largely due to an imaginary picture of an operating theatre, based on observation of the mass of blood that may well or spurt from a single accidental cut It practice the amount of blood lost by the patient under a modern surgical team is surprisingly small, and if primary hæmorrhage under these conditions does the patient any harm it is only by prolonging the period of anæsthesia For even with the most efficient swabbing and clamping the surgeon's field of vision may be temporarily obscured by oozing. and if hæmatomata are to be avoided the time spent in ligaturing small vessels is not negligible For these reasons alone a technique promising a bloodless field of operation is to be welcomed, if, as is claimed by its exponents, it has also other signal advantages, such as the promotion of healing by first intention, and the sealing of lymphatics and very small vessels in the very act of incision, it certainly deserves the attention of surgeons The technique to which we refer is the alternate use through the same electrode —a needle mounted on a hard rubber or fibre handle, known as the endotherm knife (G Wyeth) or the acusector (H A Kelly)—of an undamped high-frequency (H F) current for division of the tissues, and a damped H F current to secure hæmostasis of the larger vessels

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[1] Sickness Data of Elementary School Teachers
-19 Journal of the Royal Statistical Society,

A brief excursion into nomenclature is desirable if the relation between these methods and the older electro-cautery is to be understood At present the word diathermy is often used indiscriminately to indicate medical diathermy, where the aim is to warm the tissues to a point short of destruction, or surgical diathermy, which includes the various methods of adapting the high-frequency current to disintegrate or destroy animal tissue These methods, whereby heat is generated within the tissues in response to the oscillations of a H F current, differ radically from the transmitted heat given out by the electric or galvano-cautery, the Paquelin cautery, and the Percy cautery The effect of the transmitted heat is to cauterise or burn the tissues, the heat being generated in the applicators which are hot when applied The sharp pointed active electrode carrying H F current, on the other hand, is always cold when applied, and the heat generated in the tissues themselves does not char or burn It can, however, be used to destroy by desiccation, to destroy by coagulation, or to incise by cellular disintegration Dr G Wyeth, in a book which we review on another page, suggests that the term diathermy shall in future be used only in the sense of medical diathermy, while the term endothermy (heat from within) shall be used to include (1) monopolar H F used for desiccation , (2) bipolar H F , used for coagulation , and (3) the endotherm knife, being a H F oscillatory current produced by means of a triode which, when making contact with the tissues through a mounted needle, produces a cutting effect, sealing lymphatics as it cuts The method of electro-desiccation is applicable to a wide range of superficial lesions, including malignant ones which do not involve the deep tissues, and also warts, moles, nævi, and pigmented areas Dr W L Clark first described the technique as long ago as 1911[1] He started from the axiom that since the effect of heat on animal tissues ranges from simple hyperæmia to charring, there must be between those extremes a point where desiccation of the tissues would take place His idea was to produce, control, and sustain a degree of heat sufficient to cause a rapid desiccation of the part to be treated, sterilising it and converting it into an inert mass His experiments on cakes of soap—drying a marked area to pulverising point without charring or discolouring the paper in which it was wrapped, and without drying the soap in the surrounding areas—led to others on potatoes and on raw liver, and, finally, to a successful use of the monopolar damped H F current on superficial lesions in human subjects For deeper lesions bipolar endothermy may be used , the heat is generated by connecting one pole of the apparatus to a wet, indifferent electrode under the patient's buttocks, the operator making contact with the active electrode The d'Arsonval current used is of comparatively low-voltage and high amperage—200 to 3000 milliamperes—and a deep penetrating coagulation results It is claimed that secondary hæmorrhages rarely occur in experienced hands, but operators working near a large vessel are advised to ligature it in advance

The third type of endothermy, using Dr Wyeth's classification, is the one to which we wish to draw special attention H A Kelly and G E Ward[2] report excellent results in the surgery of carcinoma of the breast from the use of the endotherm knife devised by Dr. Wyeth This is not a true knife, but a current operating through the same type of needle as is employed for the application of bipolar damped high frequency currents The underlying principle of its action is the application of undamped high frequency current, which causes a cellular disintegration of the tissue at the point of contact, an arc being formed between the tissue and the tip of the needle which is held just over it This introduces a new technique which is not easy to acquire, the impulse to make some pressure, as in using the scalpel, being difficult to resist The exponents of this technique claim that there is healing by first intention, an immediate closure of lymphatics, capillaries, and small blood-vessels, and a diminution in the risk of local recurrence The number of clamps and ligatures necessary during an operation is considerably reduced and in some cases may be entirely eliminated, for in order to seal the larger blood vessels, which are clamped in the usual manner, the current is switched over to damped high frequency and a short application made to the clamp controlling the vessel The measure of the duration and amount of the current to be applied is a slight ring of coagulation at the point of the clamp This procedure is said to be quicker and just as efficient in stopping hæmorrhage as is the tying of a ligature Kelly and Ward warn the surgeon that the current used in the endotherm knife, which they prefer to call the acusector, causes muscular contractions when applied to nerves or muscles, but such contractions can be made almost negligible by reducing voltage according to directions given The coagulating current must also be used with the utmost caution near a muscle The great advantage of the combined use of the two forms of current is that, since so few ligatures are required, the operator need hardly ever touch the wound with his hands The necessity for having coagulation high frequency current at hand during the operation led Dr Wyeth to design the endotherm,[3] an instrument equipped for the production of currents used in monopolar and bipolar endothermy and in operations with the endotherm knife The undamped high-frequency oscillations are developed by means of a triode oscillation, the grid and anode circuits being coupled together and timed to a frequency of approximately 1000 kilocycles Very few details of the undamped high-frequency apparatus are set out in Dr Wyeth's original description of the apparatus or in his book, a disappointing omission since doubtless many surgeons will be anxious to investigate the possibilities of the combined method without having to instal an expensive complete equipment when their existing damped high frequency apparatus could be modified and extended to function for the use of the endotherm knife In this connexion it may be noted that an error has crept into the diagram of the electrical connexions of the triode oscillation found on p 30 in Dr Wyeth's book, if followed out it would lead to a considerable display of fireworks The success which has already attended the use of the endotherm knife in certain operations leads us to hope that further investigations will be carried out in this country There is especial need for the correlation of the wave form of the high-frequency oscillations and the resulting changes produced in the various types of tissue cells Apart from the destruction of neoplastic growth, the desirability is obvious of pursuing investigations into a technique by which no drop of blood is spilled "Prepare thee to cut off the flesh," said Portia, "Shed thou no blood" It would seem that we are approaching an era of surgery when Portia's dictum will not be accepted as a conclusive argument

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[1] New York Med Jour , 1911, xciii , 1131

[2] Annals of Surgery, Part 397, January, 1926, p 42

[3] American Journal of Electrotherapeutics and Radiology, 1924, xlii , 186

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BRONCHIECTASIS

The discussion on bronchiectasis at the Royal Medico Chirurgical Society of Glasgow reported in another column illuminates a number of issues upon which physicians and pathologists alike are still in doubt Sometimes we may feel inclined to wonder if our knowledge of this obstinate and unpleasant disease is advancing at all The treatment of the malady has certainly not made rapid strides, and the new major operations of surgery—thoracoplasty, and the like—have not been attended with that measure of success which has been noted in similar operations for pulmonary tuberculosis Perhaps such success was hardly to be expected The disease is usually far advanced when the patient reaches the surgeon and the whole field of operation is saturated with the organisms of suppuration from which the numerous pleural adhesions are generally not exempt It is clear, therefore, that if radical measures are to be adopted earlier diagnosis is essential, and along this line, at any rate, some advance has been made with the introduction of lipiodol The technique of this diagnostic measure is safe and easy, and there is reason to believe that the employment of the substance will go far to increase the value of diagnosis It presupposes, of course, the possession of an up-to date X ray plant and a skilled technician to use it, and like so many of the modern diagnostic methods, it adds yet another demand for increased facilities for the institutional diagnosis and treatment of disease But even with this addition to our armamentarium we are still faced with many problems in the causation of bronchiectasis At the discussion in Glasgow Dr **James Adam** mentioned the cases traceable to nasal sinusitis, a group not generally recognised in this country though described in American literature, whilst Prof **Leonard Findlay**, quoting Prof **Armand Delille** in support, emphasised the difficulties of those cases in childhood which had symptoms but no signs, or even a complete absence of either There is abundant evidence, indeed, for recognising non-tuberculous fibrosis of lung in childhood as the starting-point for many of these cases, and physicians who work in chest hospitals not infrequently have the mortification of watching cases of fibrosis of lung in children slowly going downhill from fibrosis to bronchiectasis without any clear line of demarcation and without being able to call a halt in the disease It seems unjustifiable to resort to drastic surgical measures as long as the condition is merely one of fibrosis and once sepsis—in other words bronchiectasis—has become established surgical aid may well be too late Probably, however, only a certain proportion of these cases of fibrosis go on to bronchiectasis, and it would be a great boon if we knew definitely what was the deciding factor Meanwhile it is essential not to confuse the cases with pulmonary tuberculosis, but to watch carefully for the insidious onset of any signs of pulmonary sepsis which undoubtedly spell bronchiectasis Children can be taught not to swallow their sputum, and the frequent bacteriological examination of their expectoration should never be neglected In the late stages the onset of lardaceous disease seems to be a landmark in the slow progress of disease not infrequently overlooked, frequent examinations of the urine would appear to be just as important as sputum tests On the morbid anatomy side of the picture we are inclined to think that the frequency of cerebral abscess as a complication of bronchiectasis has been exaggerated Of much more importance is the frequency with which a full bronchiectatic cavity is mistaken for an empyema, often with disastrous surgical results The histological picture of bronchiectasis, too, is essentially disappointing By the time these long standing cases reach the post-mortem room all hope of elucidating any satisfactory information as to causation has long since passed In conclusion, therefore, we have frankly to acknowledge that although there are some recent signs of advance in knowledge, notably in the matter of lipiodol, the condition of bronchiectasis has not been a conspicuous example of the advance of modern medicine, especially as regards the purely medical group of cases That the purely surgical variety of the disease, associated with a traumatic factor or foreign body, is a separate entity requiring separate consideration was well brought out in the Glasgow discussion.

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JOHN LYDEKKER

A small book written by Mr W R Dawson and published by the Seamen's Hospital Society tells the story of a great hospital benefactor John Lydekker, merchant of London and shipowner (1778–1831), had almost as great an influence on this Society as would entitle him to the prayers usual on behalf of a pious founder His father left New York when it ceased to be an English colony and brought his children to London Here the eldest son was at one time an eminent physician, and the third son, John, became a merchant in Cheapside, concerning himself mainly with cane and whalebone, then wanted for corsets and the ribs of umbrellas Naturally he took an interest in whaling ships in the South Seas, and he owned four in 1829 In 1830 he made a handsome donation to the Seamen's Hospital in recognition of their kindness to some Polynesian seamen from his ships In those days, less than a hundred years ago, life in London was much less secure than now, water was often drawn from shallow, contaminated wells, drainage was by open sewers to the Thames, burials were apt to be made in the crypts of churches to avoid the resurrectionists In July, 1832, Lydekker went from his house in the Strand to stay with a friend in Fenchurch-street, fell sick of cholera which was then prevalent, and feeling himself near his end, wrote out a short will which he signed, leaving the residue of his property to the Seamen's Hospital Society This will, although unwitnessed, was not contested by his family, and brought the Society a sum of £58,729 At that time the Seamen's Hospital was situated in the 104-gun ship *Dreadnought* lying in the Thames off Greenwich, but in 1870 a 99-year lease of the old infirmary of Greenwich Hospital was acquired, and in 1926, with the help of the Lydekker bequest, £23,000 left by B T *Crichton*, and other benefactions, patients to the number of 28 264 were treated in one or other of its eight *establishments* The Seamen's Society owes many of its opportunities of usefulness to the munificence of shipowners, of whom Lydekker was the most bountiful There is a marble monument to his memory at Lloyds and a stained glass window in the chapel at Greenwich

Annotations.

"Ne quid nimis"

THE DEVELOPMENT OF MENTAL HOSPITALS

CIRCULARS have been sent out by the Royal Medico-Psychological Association to every mental institution in England inviting the medical superintendents to afford to their staffs facilities for attending clinical meetings in accordance with a plan whose organisation is now under consideration. It is proposed that these meetings should be held under the auspices of the Association, and to encourage the attendance of the workers in psychiatric establishments the managing bodies will be asked to sanction travelling and other reasonable expenses to their medical officers. The movement is in accordance with the expressed wishes of the Boards of Control in England and Wales, and in Scotland. The circular suggests that the clinical meetings should not be limited to members of the Association, but that all medical men, institutional officers, or private practitioners should be made welcome and there can be no doubt whatever of the value of such a departure. Such meetings would stimulate psychiatric work and further the better treatment of cases of mental disorder to the benefit of the patients and to the instruction of the profession in directions of particular value for the conduct of practice. A memorandum on the subject issued by the Association expresses the hope that there may be 12 meetings a year in each of certain areas whose size remains for decision, and that a special point at these meetings should be made of the study of groups of cases presenting similar symptoms. All will agree with the implication that the demonstration of actual cases at clinical meetings is more instructive than the reading of papers, and the scheme does not depend for success upon securing large attendances; small gatherings at which interchanges of personal experience can take place should give better results than crowded meetings. The existing plan of the Association will need dividing into areas in accordance with the number and situation of the mental hospitals, but the actual scheme has not yet been formulated, and for pecuniary reasons the support of the local authorities will be required, for it is unreasonable to expect the medical staffs of the institutions to finance a great education design as well as provide for its scientific and practical working. The most valuable result of such a scheme would be the relief from isolation of many medical institutions. Mental hospitals lack public sympathy and support, and fall easy victims to misrepresentation because much of their work is necessarily isolated. But though they can never be entirely open institutions, it is quite misleading to describe the insane as being treated "behind shut doors." This is well shown in an impressive plea for the fuller cooperation of the public in the life of psychiatric institutions written by the President of the Royal Medico-Psychological Association in aid of the National Council for Mental Hygiene.[1] Lieut.-Colonel J. R. Lord points to the good results which would follow upon the appointment of independent, unofficial and voluntary mental hospital visitors as an intermediary between patients and their homes, and all who have studied the problems concerned will agree with him that an organisation of such visitors would be a powerful agency both for science and humanity.

KRUKENBERG TUMOURS

AT a recent meeting of the North of England Obstetrical Society Prof. Blair Bell who showed three cases of Krukenberg tumour in women aged 35, 42 and 32 remarked that these tumours which were originally described by Krukenberg as primary sarcoma carcinomatodes of the ovary, were now invariably regarded as secondary to gastric or possibly intestinal carcinoma, as was exemplified in his own cases. Similar views are expressed by Dr. Julius Jarcho,[1] attending gynæcologist and obstetrician to the Sydenham Hospital, New York City, who records seven cases which he had studied at the Szent Istvan Hospital, Budapest. Three of his patients were operated on for tumours of the adnexa, the material removed showing metastatic ovarian tumours. In two of the three the necropsy revealed gastric carcinoma, while the third patient was lost sight of. In the four remaining cases the ovarian tumours were not discovered until the necropsy, and like the other two were found associated with primary gastric carcinoma. Of the four gastric carcinomata in which a histological examination was made three consisted of solid groups of epithelial cells, some of which showed mucinous changes, while one carcinoma was fibrous and showed no mucinous transformation. On naked-eye examination the ovaries in all the cases showed typical uniform enlargement with preservation of the normal shape. The cut surface was generally solid, except for a few discrete cysts. In some areas the solid tissue appeared gelatinous. Histologically, the tumours presented the usual Krukenberg structure, signet-ring cells being arranged loosely or compactly between connective tissue rich in spindle-shaped cells. Two of the ovarian tumours showed irregular gland-like structures resembling adenocarcinoma but in transition, with groups of signet-ring cells. Evidence was found that the gastric carcinoma had been propagated by retroperitoneal lymphatic channels. Dr. Jarcho comes to the conclusion that, in the formation of these ovarian tumours, propagation through the lymphatics plays an important part, whereas propagation along the blood-vessels and implantation are of decidedly less moment.

FOOD HANDLERS

SHORTLY after the war, when new sanitary regulations were being issued,[2] the opportunity was taken to include measures to prevent the spread of infection through the handling of food by persons carrying the germs of dysentery and enteric fever. More recent regulations[3] require that no person who is aware that he is suffering from tuberculosis of the respiratory tract shall take up employment in connexion with a dairy which would involve the milking of cows, the treatment of milk, or the handling of vessels used for containing milk; they also give the local authority power to secure the dismissal of any such person already employed if he is in an infectious state. It has been suggested that much could be done towards achieving the object of these latter regulations if employers in the milk trade, before engaging an employee, required the production of a recent medical certificate stating that the physical condition of the applicant for employment was such as to satisfy the requirements. Some local authorities have accordingly made arrangements for the necessary examination to be made free of charge by their tuberculosis officers. The medical examination of food handlers has been taken very much further in the United States of America, where Dr. M. James Fine, Director of the Tuberculosis Division, Newark City Department of Health, New Jersey, has recently reported[4] on the examinations of food handlers conducted in that city of about half a million inhabitants. The work was started with restaurant employees, and has gradually extended, until at the present time grocers, confectioners, delicatessen-store workers, and milk handlers are examined. Owing to the absence of positive results the routine examination of nose and throat cultures was discontinued in 1926; cultures are only made w if considered necessary after the examination the throat Widal tests for typhoid fever have ›n discontinued for the same reason The figures en relate to the years 1920-25, during which ,188 restaurant employees and 9869 milk dealers were amined, of all those examined, 155 were rejected y the health department for tuberculosis, and 45 for venereal disease Temporary cards were issued to 95 persons who had tuberculosis or venereal disease, but whose condition was not active Although the examination is compulsory, probably those food handlers who came to the diagnostic clinic were persons who felt reasonably certain that they were free from the evidence of communicable diseases, this self-selection undoubtedly had some influence in keeping down the percentage of tuberculous and venereal diseased individuals among those examined Considerable stress is laid upon the importance of the examination being made by physicians specially ppointed to do this work, obviously it relieves the vate doctor of the responsibility of taking away his ent's employment Dr Fine comments upon the number of food handlers rejected by private rs in Newark, Kansas City, and New York City vaik itself there have been fewer rejections each ce 1920, this may be taken as an indication ersons with tuberculosis or venereal disease t they will not be certified fit for employ- od handlers, they secure other occupations concludes his interesting survey by ig the arrangements made for the examina- od handlers in other countries, which he inadequate

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[1] Mental Hospitals and the Public. Adlard and Son. 1927. 1s. 6d.

[1] American Journal of Obstetrics and Gynecology, March, 1927.

[2] Public Health (Pneumonia, Malaria, Dysentery, &c.) Regulations, 1919. See THE LANCET, 1919, i., 281.

[3] Public Health (Prevention of Tuberculosis) Regulations, 192

[4] Public Health Reports of the United States Public Health Service, March 25th, p. 799.

ION AND DEATH CERTIFICATION

AR letter will be addressed shortly to he medical profession by the Cremation Society of England, signed by the Chairman of the Society, Prof Chalmers Mitchell, Sir Thomas Horder, and Mr Herbert T Herring, honorary secretary of the Society, in which it is pointed out that certain reforms are necessary in the interests of the medical profession as well as of the public in respect to the disposal of bodies by cremation The Births and Deaths Registration Act, 1926, comes into force next July, and imposes upon the medical practitioner important public duties, without remuneration in the case of burial, but in the case of cremation procedure is controlled by separate regulations These regulations, which are laid down by statutory rules and orders under the Cremation Act, 1902, enact (under Form B) that the body must be seen and identified after death, and the fact of death certified by the registered medical practitioner who attended deceased in the last illness and who can certify the cause of death This service is remunerated as a rule with the fee for an ordinary professional visit But in disposal of the body by cremation a second medical certificate (under Form C) must be given, in which the identity of the deceased, the fact of death, and other particulars—verifying the answers set out in Form B—must be given either by an independent medical practitioner, of not less than five years' standing, who has been appointed by the cremation authority for the purpose, or, if such an appointment is not made by a practitioner of five years' standing who holds one of the following appointments medical officer of health, police surgeon, certifying surgeon under the Factory and Workshop Act 1901 medical referee under the Workmen's Compensation Act or who is physician or surgeon to a public general hospital containing not less than 50 beds It is to the circumstances connected with Form C that the circular letter refers, pointing out that the medical man signing it ought to receive fair remuneration The Cremation Act requires the form to be signed by medical practitioners of five years' standing either appointed by a cremation authority or being the holders of certain public appointments and the Cremation Society desires to bring before the medical profession the necessity of increasing the opportunities of the cremation authorities to use their power of appointment Cremation is slowly becoming more frequent in this country, where it has always been advocated by an influential section of the medical profession, so that it is reasonable for the Society to invite the attention of general practitioners to their opportunity of collaboration The remuneration suggested by the Society for certificates under Form C is "the usual fee for a first professional visit," and the direct object of the circular letter is to invite doctors to communicate with the Cremation Society and signify willingness in such circumstances to sign these confirmatory medical certificates required by the Cremation Act Lists can then be furnished to the cremation authorities, who will know where to turn in making their appointments, and who will be expected to recognise the responsibility incurred, and to make their selections accordingly

PULMONARY INFECTION FOLLOWING OPERATION

IT is not always realised how useful is a patient's ability to cough, and thus expel infective material from the lungs and bronchi If (as is said) there is always some inhalation of septic secretions during anæsthesia, then a patient's liability to post-operative pneumonia depends on the degree to which his power of coughing is conserved An estimate of this power might therefore be some guide to whether there was a likelihood of his contracting the complication Such an estimate is not impossible, for the efficiency of a cough depends on the depth of the initial inspiration and the force behind the succeeding expiratory effort—which is derived almost entirely from the abdominal muscles—and it is just these two factors that are estimated by measuring the vital capacity, that is to say, the maximal amount of air that can be breathed out after the deepest possible inspiration This essentially is the argument which forms the basis of a recent paper [1] by Dr E D Churchill and Dr Donald McNeil, of Boston They found that after operations on the right upper quadrant of the abdomen the patient's vital capacity was on the average reduced by 70 per cent on the first day, after which a steady improvement took place, until on the fourteenth day the reduction was only 20 per cent After clean appendicectomies and operation for uncomplicated inguinal herniæ, there was a fall of 50 per cent on the first day, and a normal figure was obtained by the eleventh day, after non-abdominal operations no reduction was observed This diminution in vital capacity is attributed mainly to the abdominal muscles being held in voluntary or involuntary spasm, so as to protect the injured part from painful movement, and also in part to inspiration being restricted by a tight abdominal binder, in a normal individual such a binder was found to reduce the vital capacity by 30 per cent Other less important factors were posture, the effect of sedative drugs, and abdominal distension In support of their findings, Dr Churchill and Dr McNeil quote figures given by E C Cutler and A M Hunt,[2] with whose results their measurements closely correspond They reach the general conclusion that the chances of pulmonary complications increase as the patient's preoperative vital capacity approaches his theoretical tidal air requirement, but the evidence they give is insufficient for proof Cases of cardiac and pulmonary disease were excluded from the series, and the height and weight of patients, though they were observed, are not recorded The results of the investigation are what might be anticipated A tight abdominal binder clearly limits both costal and diaphragmatic inspiration, and a full expiration is obviously impossible when the abdominal muscles have recently been incised Other things being equal, the postoperative variations observed are probably due to variation in the stoicism of the patients Postoperative pneumonia notoriously attacks the bases of the lungs, which are expanded almost entirely by diaphragmatic action Any contraction of the diaphragm must either raise the intra-abdominal pressure or move the abdominal wall, and either alternative will cause pain in an abdominal incision When this pain is present, movement of the diaphragm is repressed, the bases of the lungs are poorly aerated, and secretions stagnate in them, for even a cough cannot clear a portion of lung containing too little air If this is the real reason why inflammation so often attacks the bases of the lungs after abdominal operations, the upset of balance between costal and diaphragmatic respiration is a greater danger than limitation of the power of coughing It seems doubtful whether preoperative estimation of a patient's vital capacity will ever prove a valuable method of judging his liability to this complication

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[1] Surgery, Gynecology, and Obstetrics, April, 1927, Part I, p 483

[2] Arch Surg, 1920, i, 114, and Arch Int Med, 1922, xxix, 419

EARLY INFANT MORTALITY

IN a recent number of the U S Public Health Reports (March 18th, 1927) Dr E Blanche Sterling, an acting assistant surgeon in the Public Health Service, presents an exhaustive statistical study of the problem of fœtal and neonatal death The subject is one of great moment in the United States of America, for Dr Sterling opens her study by showing that the returns for dead births and neonatal deaths during 1924 account for 70 7 per cent of the whole number of infant deaths in the States where precise figures are available And, as in other countries, the neonatal death-rate in the States has not fallen at the same rate as the infant mortality-rate Dr Sterling brings forward evidence to show that clinical examination alone cannot be relied on to elicit the true cause of fœtal death , in many instances a post-mortem examination is needed to reveal it Among a total of 18,634 registered dead births, in 30 2 per cent the cause is entered under the heading " not specified or unknown," while the complications of labour, including dead births due to trouble with the umbilical cord, account for another 23 per cent The total figures, it may be noticed in passing, include " miscarriages and abortions," and if these were omitted the percentages would presumably be still higher In an analysis of deaths based upon autopsy the percentage of deaths from unknown cause—that is, after elimination of every ascertainable cause,—drops to 8–10 per cent , and those ascribed to complications of labour rise to 35–50 per cent Many of the latter are due to intracranial lesions discoverable only by opening the skull The proportion is, roughly, the same whether the figures examined are taken from American, English, or German returns Detailed comparison is, however, barely possible owing to the wide divergences in the methods of classification adopted by different authors This is well illustrated by Dr Sterling in a table comparing the percentages found by Eardley Holland in this country and those of the U S Bureau of the Census , the former based on the results of autopsy, the latter on clinical examination only

Causes of Fœtal Death or Still-birth

Cause	U S A (Bureau of Census) Per cent	England (Eardley Holland) Per cent
Complications of labour	23 1	51
Diseases or conditions of placenta and membranes	8 9	6
Prematurity (abortion, miscarriage, and premature birth)	8 2	—
Toxiemias of pregnancy	5 2	10
Malformation (congenital defects)	4 1	5
Syphilis	2 6	16
Traumatism and overwork	3 7	—
Other diseases and conditions of mother	3 1	2
Various causes	10 9	—
Not specified and unknown	30 2	10

In examining the causes assigned to neonatal deaths premature birth occupies a prominent position if clinical data alone are available Post-mortem study, however, displaces this group from its prominent position and shows that many of these deaths were, in fact due to complications of labour As Dr Sterling justly remarks " Prematurity, ranking first in the census figures, goes down to fourth or fifth place in the autopsy group A post-mortem examination brings to light the real cause of death in many premature infants, showing that the child did not die simply because it was premature, but that its premature birth and death were both dependent upon some other factor " The other chief causes of both fœtal and neonatal death are of varying magnitude in the different investigations, and are difficult to compare owing to the divergences of classification In most of the American data, compiled on clinical examination only, syphilis is given a very low place, the highest being below 3 per cent The autopsy figures for America show a considerable increase on this figure

Dr Sterling has collected interesting data on the possible relationship of social conditions to fœtal and neonatal deaths The figures collected by the Children's Bureau from eight American cities suggest that the employment of the mother outside the home is unfavourable to survival in the early months of life The infant mortality-rates for different races living in America lead the author to conclude that " early infant mortality varies with racial stock for reasons unknown " On the whole the most favourable rates are those for Italians and Russians The report offers many other points of interest The free reproduction of tables from various authors and the very complete bibliography render it a valuable basis for further investigation Much of the work done hitherto remains isolated owing to lack of uniformity in the basis of classification Until some degree of comparability is achieved any comparison of the causes of fœtal and neonatal deaths in the various countries of the world must be inconclusive

STATISTICAL EPIDEMIOLOGY IN LONDON.

As we announced recently,[1] the London School of Hygiene and Tropical Medicine will begin advanced teaching in bacteriology and immunology this autumn, when Prof W W C Topley will take up his appointment We are informed that Dr Major Greenwood, who, like Dr Topley, was originally appointed a professor in the new school from August, 1928, will also enter upon some of his duties in October of this year and will receive small groups of post-graduate students for three months' or six months' course, in general and statistical epidemiology (Full particulars may be obtained from the Director of the School at 37, Torrington-square, W C 1) Prof Greenwood has always been encouraged by the medical department of the Ministry of Health and the Medical Research Council to receive a small number of post-graduates at the National Institute of Medical Research, where, in virtue of a working agreement between the Ministry and the Council, he carries out statistical investigations of interest to both departments In the past year students from Berlin, Riga, and Madrid have worked with him The method of instruction now in use is described by Prof Greenwood in an article published in the current issue of the *Archiv fur Soziale Hygiene und Demographie* (Bd II , Heft 3, 1927) from which we quote the following —

" My students usually begin by trying out the simplest methods of statistical calculation not upon artificial examples (ausgeartete Kunststücke) but on real data In an official department of medical statistics there are usually data of all kinds to hand, so that the school medical officer can be given measurements of elementary school-children, the epidemiologist statistics of infectious diseases, and so on. After a week or two in which the student gains some self-confidence and learns to handle a calculating machine, tables, and the simpler formulæ, he can tackle the data which really interest him What remains of theory must follow the rule *solvitur ambulando* Of course, a serious student would also read a text-book and seek explanations of difficulties Once or twice a week some particular topic is made the subject of a general discussion For those who seek a wider mathematical training Prof Pearson's Institute offers a rich choice of lectures and practical classes Neither the National Institute of Medical Research now, nor the School of Hygiene in the future, will claim to be able to produce by this method professional statisticians A foreigner who wishes to master the general theory of mathematical statistics must betake himself to Prof Pearson's Institute or to Mr Udny Yule, at Cambridge. I and my colleagues are only competent to help those who wish to employ the statistical method as a useful tool in epidemiological and public health investigations In a word, we are not epidemiological statisticians but statistical epidemiologists "

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[1] THE LANCET, April 30th, p 937.

No doubt this method will be continued by Prof Greenwood when he formally assumes the professorial functions and it appears to be suited to the requirements of most medical post-graduates

DANGERS OF THE BARBITURIC HYPNOTICS

Since 1902, when the barbituric acid group of drugs was first introduced, there has been a steadily increasing stream of hypnotic preparations of this class The number of proprietary remedies now on the market indicates the rapidity of their rise to popularity and the extensive use which is being made of them by practitioners throughout the world Veronal, medinal, dial, and the like have a certain and speedy narcotic action which is eminently satisfactory, and after their use the patient wakes without objectionable sequelæ Yet prolonged use of these drugs has at times produced symptoms almost identical with those of disease of the central nervous system and Sir William Willcox speaking at a meeting of the Section of Therapeutics and Pharmacology of the Royal Society of Medicine on May 10th, was able to recall two cases one of allonal and one of veronal poisoning, which had been sent to him by a neurologist as undoubted cases of organic nervous disease Ocular palsies, nystagmus, paralyses of the facial nerve or of a limb, polyneuritis, ataxia, remarkable hypotonia of the muscular system, scanning speech, faults of memory and marked emotional instability have all been recorded again and again in chronic cases of poisoning The literature on the subject is indeed enormous as Dr Helen Young found when collaborating with Sir William Willcox and Dr F A Pickworth in the preparation of the paper presented at this meeting Most regrettable of all is the predominance of mental symptoms and especially of depression, leading to frequent suicides The first case of directly fatal poisoning occurred in 1905 and the numbers rapidly increased until 1913 when the group was put on Part II of the Poisons Schedule, in 1918 it was transferred to Part I, and this resulted in a distinct drop but in 1925 the numbers rose again to 22, as the public began to find out the possibility of using medical prescriptions Sir William Willcox said that he regards these statistics as incomplete for additional fatalities from these drugs may be hidden in the class of "narcotic poisoning" or in that of "broncho-pneumonia," since the comatose condition so lowers the resistance of the lungs that a true terminal broncho-pneumonia almost always occurs Most practitioners consider these drugs almost harmless and prescribe them freely, but certain investigators have always had their suspicions, and Sir William Willcox has already sounded a note of warning Never before however has he been so uncompromisingly backed by the weight of solid laboratory evidence Dr Pickworth reported the experiments carried out under rigid control conditions in Sir Frederick Mott s laboratories at Birmingham and showed that continued administration of these drugs produces pathological changes in the central nervous system which although they usually disappear when the dose is discontinued, may nevertheless become permanent The chief phenomenon is the deposition of a homogeneous mucinoid substance in the white matter of the central nervous system, This is believed to be a product of neural metabolism, so that it must have an inhibitory effect on the life of the cells Moreover, it is present in considerable quantity, and probably causes pressure and affects the intracranial circulation Conduction along the nerve-fibres is interfered with, and a large part of the narcotic effect is due to the damping down of visceral afferent impulses When administration of the drugs is still further continued the cerebral cells shrink, lose their processes and stain poorly, and the Nissl substance is found to be reduced or even absent It has been shown that these lipoid-soluble drugs render the lipoid envelope of the cell less permeable, so that tissue-respiration is embarrassed throughout the body There is a capillary dilatation, an increase in the flow of blood and a slowing of the pulse The resemblance between the comatose condition induced by them and the condition of normal sleep is only superficial, and Dr Pickworth found that under the influence of these drugs the margin between sleep and fatal coma in cats was a very narrow one The peripheral parts of the nervous system are most easily affected and the centre more slowly There was definite evidence of a cumulative action, and of the existence of addiction Sir William Willcox had no doubt whatever Nor, he maintained, is tolerance ever established He felt strongly that the danger of these drugs was not properly recognised They should be ordered only on a prescription marked "not to be repeated" and covering only six doses The patient should be warned against daily doses, and preferably only one should be given each week He desired to warn practitioners most solemnly against advertisements which urged the value and ignored the dangers of preparations of the barbituric acid group The poisonous constituent was often concealed under a fancy name, and a note in very small print He regarded the continued introduction of new preparations and the glowing advertisements accompanying them, as seriously misleading to the profession and a grave danger to the public

E 107.

The new anæsthetic E 107 or avertin to which we alluded in a recent annotation (The Lancet, April 2nd, p 718) is further described in the *Deutsche Medizinische Wochenschrift* of April 22nd, and we are informed of its chemical nature, hitherto not divulged. The substance is tribromethylalcohol (CBr_3CH_2OH) It decomposes on long exposure to light or in alcoholic solution From experiments with rabbits it appears that avertin is rapidly eliminated by the kidneys, 50 per cent of the amount administered being passed out into the urine in combination with glycuronic acid. The narcotic action of the anæsthetic is very rapid, and when it is injected intravenously, is almost instantaneous With excessive doses the respiratory centre is rapidly paralysed Further clinical evidence is wanted before the drug can be tried with confidence for operations

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN

The annual general meeting of this Society was held at 11, Chandos-street London, W 1 on May 11th, when the report for the year 1926 was presented The Society has scored in its long wrangle with the Inland Revenue Authorities for refund of income-tax as a charity under the Finance Act In 1925 the Commissioners of Inland Revenue dissented from the decision of the Special Commissioners to grant rebate and requested them to state a case for hearing in the High Court. With income-tax at *4s* in the pound the annual tax would amount to some £940, and the directors of the Society were compelled to reduce the Christmas present in December, 1925, and the grants from the Brickwell Fund in January, 1926 In June, 1926, however, when the case came up for hearing before Mr. Justice Rowlatt in the High Court, the Society obtained judgment with costs. The sum of £1774 has since been received from the Inland Revenue being the amount of income-tax withheld during the last two years. In October, 1926 it was therefore possible to pay the full amount that had been deducted from the grants to widows and orphans. The legal expenses incurred amounted to £276, of which £130 was recovered from the Inland Revenue. A legacy, amounting to £3 935, brought up the total of invested capital to £138,550. Since the last report four members have been elected and one has died. The Society now consists of one hon. member, 161 life, and 141 ordinary members, making a total of 303. The income from investments amounted to £3953, £371 was received from subscriptions and donations, and £42 from life subscriptions. The working expenses were £514. During the year three widows died and one came on the funds, the amount distributed in grants during the year being £5420 8s. At the close of the year there were 49 widows and seven orphans in receipt of grants. Membership in the Society is open to any registered medical practitioner who at the time of his election is resident within a 20-miles radius of Charing Cross. Should a member remove anywhere outside the radius, even beyond the British Isles, he nevertheless remains a member of the Society, provided he has conformed to the by-laws. Relief is granted to the necessitous widows and orphans of deceased members of three years' standing and of life members. The annual subscription for a member who at the time of his election is under 40 years of age is 2 guineas, if over 40 but under 50, 3 guineas, and if over 50, 4 guineas.

IN an article published in our issue of April 30th by Sir Arnold Lawson and Mr. A. L. Whitehead, dealing with the protection of the eyes necessary for those viewing the total eclipse, a description was given of a screen through which observations of the phenomenon throughout all its phases could be made with perfect comfort and safety. We learn, however, that the price of the screen was wrongly stated. Messrs. Hamblin, the well-known firm of opticians of 15 Wigmore-street, London, who have placed the screen "Eclipsia," on the market, state that there are two varieties of the mask which will cost 1*s.* 6*d.* and 3*s.* 6*d.* respectively, whereas the original article in our columns gave the price as 1*s.* We are informed that the cheaper screen is just as effective a filter as the more expensive one, but whereas the former consists of a screen of only one density, the latter, a more elaborate affair, having three grades of density, allows the eclipse to be viewed to the best advantage at different stages.

AN address will be delivered by Sir John Rose Bradford to-day, Friday, May 13th, at 8.30 P.M., at University College, London, the subject being the Relations of the College to Medical Education. The address is the last of four delivered in connexion with the centenary celebrations of the College, the previous lectures having been delivered by the late Prof. Starling on Feb. 28th, Sir Oliver Lodge on March 14th, and Dr. W. R. Chambers on May 2nd. The chair will be taken by Sir George Thane and academic dress and decorations will be worn.

SIR Alexander Houston's twenty-first annual report to the Metropolitan Water Board, which has just been issued (Messrs. P. S. King and Son. 21*s.*) gives the results of the chemical and bacteriological examination of the London waters for the calendar year 1926, and includes an illustrated account of the water-supply from the Kentish Wells.

THE next session of the General Medical Council will commence at 2 P.M. on Tuesday, May 24th, when the President, Sir Donald MacAlister, will take the chair and give an address.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CCXXIII

THE TREATMENT OF LUPUS VULGARIS

THE successful treatment of lupus vulgaris, which entails the destruction of the disease with the minimum of scarring, is fraught with difficulty. The clinical types and phases of the disease are so varied that no single method of treatment is suitable for all cases, and, to obtain the best results, not only a knowledge of the different forms of treatment is necessary, but the right selection of the method best adapted to the peculiarities of the individual case. As it is a local disease of the skin, due to the presence of tubercle bacilli *in situ*, the treatment is essentially local. At the same time, the value of the local treatment can be greatly enhanced by combining it with a suitable tonic regime on general medical principles, with plenty of fresh air, good food, outdoor exercise and sunshine, or, where the last is unobtainable, with artificial sunlight from an arc lamp. There is no internal specific for lupus. Thyroid extract, which once had a reputation in this connexion, has almost been forgotten; tuberculin injections have not fulfilled their early promise, and since they are liable to light up latent foci of tuberculosis elsewhere, they are now comparatively rarely employed, except in extensive ulcerated cases, where injections of Koch's tuberculin (T.R.) or tuberculin (B.E.) may be of service in healing the ulceration.

The main objects of local treatment are: (1) the complete removal of the diseased tissue, and (2) the production of as little scarring and disfigurement as possible. The methods employed may be conveniently considered under the headings of surgical, physical, chemical, and radiotherapeutic.

Surgical Methods

Excision.—Where practicable, when the lesions are not too extensive, and are situated on covered parts of the body, excision is the most satisfactory treatment, and even on the face, in the hands of a skilled operator, excellent results may be obtained by it. The incision should be made at least a quarter of an inch beyond the diseased area, and not only the skin, but the superficial half of the subcutaneous fat should be removed. After the excision the surface should be grafted. Krause's deep grafting should be employed rather than Thiersch grafting, since, with the latter, the wound does not heal rapidly, and the scar is liable to be uneven, occasionally keloidal, and may be followed by contraction. Deep grafting consists of transplanting a piece of skin of the exact shape and size of the tissue excised, taken from some suitable part, such as the thigh. The graft should be cut as deep as the fat layer, the fat being scraped off before it is put in position, and it should be slightly larger than the required size to allow for shrinkage. After being placed in position, it is neatly sutured to the edges of the wound. Where the lupus occurs about the mouth, eyelids, and nose, it may be difficult to get the graft to hold, and in such cases some form of plastic operation may be resorted to, employing grafts from a neighbouring part with pedicles, which can be severed when the graft has healed in place.

Scraping is a simpler method than excision, but the results from it are more uncertain. It is apt to leave unsightly scars, and if not sufficiently drastic may lead to a dissemination of the disease by opening up the lymphatics. It should be done under a general anæsthetic by a Volkmann spoon, methodically, thoroughly and firmly, and should reach down to the subcutaneous tissue. Owing to the hæmorrhage associated with scraping it is difficult to distinguish healthy from diseased tissue except by the feeling of resistance to the spoon, the lupus being so much softer than the healthy tissue The hæmorrhage is, as a rule, too profuse to be controlled by pressure, but can be stopped by ironing the surface with a Paquelin cautery In spite of the most careful scraping, small diseased foci are apt to be left To obviate this, the raw surface should be dabbed over with pure carbolic, or smeared with zinc chloride paste, made fresh by pounding up a small quantity of zinc chloride in a mortar with glycerine and water. The surface should then be covered with an aseptic powder, and a dry dressing applied When the wound has healed, it should be carefully examined for foci of the disease which may remain This is best done by a diascope, or piece of glass pressed down on the lesion, when the diseased foci can be detected as semi-translucent brownish specks These may be dealt with by cauterisation with a fine pointed Paquelin cautery, or by acid nitrate of mercury drilled in by a glass pen

Scarification is a somewhat neglected method, which is useful for the destruction of small lesions about the face, as it causes comparatively little scarring It consists of chopping up the nodule by a number of criss-cross incisions, either by a sharp tenotome, or by a special instrument devised for the purpose with several parallel blades The bleeding is controlled by pressure, followed by the application of powdered permanganate of potash, or zinc chloride paste It may be necessary to repeat the scarification should any disease persist after healing

Physical Methods

Cauterisation —Reference has already been made to the use of the actual cautery for the destruction of persistent foci of disease after scraping, and for the control of hæmorrhage For this purpose, the Paquelin cautery, with a point of suitable size, at a dull red heat, is superior to the electro-cautery, as it is more easily controlled and manipulated The disadvantages of the use of the actual cautery, however, are that it is liable to destroy healthy as well as diseased tissue, and to be followed by a hypertrophic scar As the burning is almost instantaneous, small lesions can be destroyed by this means without the necessity of a general anæsthetic

Freezing with solid carbon dioxide is a useful treatment, especially in lupus of the verrucose type For warty patches situated on the extremities, freezings, repeated at intervals of about a week to allow healing to take place in the interval, give better results than any other form of treatment The exposures should be from 30–60 seconds, with firm pressure, the applicator being of suitable size After the freezing, the exposed area should be covered with a simple aseptic dressing until healing has taken place

Chemical Methods

The most important caustics are pyrogallic acid, salicylic acid, permanganate of potash, silver nitrate, zinc chloride, and acid nitrate of mercury Both pyrogallic acid and salicylic acid were once largely used in the form of plasters, generally combined with creosote, or as paste spread on lint These were applied continuously to the lupus patch, until sloughing of the diseased tissue took place This treatment during recent years has fallen largely into disuse, owing to its tediousness and the pain associated with it The same criticism may be made with regard to permanganate of potash which was employed as a powder spread over the patch, and then covered with cotton-wool, or as a 10 per cent solution painted on daily Silver nitrate is still used in the form of a pencil, which is drilled down into the nodule, and is of some service in lupus of the mucous membranes Acid nitrate of mercury is the most useful of the caustics, and is of special value in destroying isolated nodules It consists of one part of mercury dissolved in two parts of nitric acid (specific gravity 1 5) It is applied either on a piece of cotton-wool twisted on a match or by a glass pen, and should be kept in contact with the nodule for at least a minute The application causes the diseased tissue to become white and opaque, and results in the formation of a brownish crust, which becomes detached when healing takes place Where the caustic is applied to small areas comparatively little discomfort is caused by it, but if the patches be of the size of a sixpence or larger, there may be severe pain for some hours after the application

Radiotherapeutic Methods

Phototherapy —Apart from excision phototherapy is generally recognised as the most permanent treatment of lupus, and the one that produces the least disfigurement, the resultant scar being sometimes so slight as to be almost unnoticeable This method is so tedious, however, that its use has to be restricted to lupus of the face and neck, or of the thin skin over joints, where it is important to avoid contracture Long experience of its use has shown that a cure can be effected in 60 to 70 per cent of cases, provided the patient has the time and patience to have the treatment properly carried out Where failure has taken place, it has generally been because the lupus is too deeply situated for the irradiation to be effective, or because the diseased tissue was covered with a cicatrix impermeable to the rays The selection of the best type of lamp is a matter of opinion; the technique should be learned in one of the hospital departments where it is in use

X rays have been extensively used in the treatment of lupus in the past, but their indiscriminate employment for this purpose has done more harm than good In my experience it is impossible to destroy the lupus tissue by this means without causing an X ray burn, possibly followed by epithelioma It has recently been shows that cancer developing in old cases of lupus vulgaris has been much more common since the introduction of the X rays than it was previously. On this account they should be used with the greatest caution I have found that they are of service for the healing of superficial ulcers in lupus as a preliminary to phototherapy, and for lesions in certain situations, such as the eyelids or the mucous membranes, which cannot be dealt with satisfactorily by actinic rays owing to the difficulties of exerting the requisite pressure

Radium is rarely used in this connexion Its action is similar to the X rays, and the results from it are not so satisfactory as those from phototherapy

Conclusion

Unless the disease has been completely removed by excision, recurrences are so liable to take place that the patient must be kept under observation and examined periodically, any foci of disease being immediately dealt with As a general rule, where the lesions are of limited extent, and situated on covered parts of the body, excision followed by deep grafting is the best treatment Where they are too extensive for excision they should be scraped and cauterised For lupus on the face phototherapy gives the best results and where the disease has attacked the mucous membrane, scraping followed by the application of lactic acid, or silver nitrate, or the actual cautery are the most useful methods

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F R C P Lond ,
Physician for Diseases of the Skin, Charing Cross Hospital

SHELLEY MEMORIAL PRIZES —In 1892 the centenary of Shelley was commemorated by the placing of a memorial in Horsham Church and in other ways A balance remained of money subscribed, and this has since been invested so that on Feb 25th the trustees were able to hand over £500 War stock to the West Sussex County Council for the establishment of Shelley Memorial Prizes for Natural Science in the Public Secondary Schools maintained or aided by the Council

Special Articles.

THE CENSUS OF HOUSING IN ENGLAND.

THE General Report of the Census of England and Wales, 1921,[1] now issued, contains much information of interest to medical and other social workers, and the wise worker will study carefully this record of the massed material on which he has to work No part of this information possesses such vital importance as that relating to the housing of the people , and in this article it is proposed to concentrate on this part of the report, showing graphically and otherwise some of the socially most significant facts bearing on this problem

For the census purposes the groups of persons included in a separate census schedule consist of either " private " or " non-private " families The last-named includes people in hotels, hospitals, &c , while a private family may include a lodger boarding with the family, but not a lodger occupying separately part of the house

Thus defined the average number of families per 100 occupied dwellings was 109 in 1911 and 112 in 1921, but owing to the smaller average size of families the number of persons per 100 occupied dwellings was only 485 in 1921 as compared with 493 in 1911

Neither of these figures can be regarded as indicating improvement or worsening of housing without further detailed analysis which is given in the census report

Size of Dwellings

Of the total dwellings 16 9 per cent comprised three rooms or less and 48 8 per cent , or nearly half, contained four or five rooms only Of the total 8,750,000 private families in England and Wales 80 2 per cent were living in the single occupation of separate dwellings, 13 7 per cent were living two families to a dwelling, and in 6 1 per cent of the dwellings there were three or more families

In mitigation of the apparent large departure from the ideal of one family to one dwelling, it should be noted that a single lodger boarding separately from the occupier is regarded as a separate family

Local Distribution of Size of Dwellings —As the chief social interest centres in the smallest dwellings we propose to consider these particularly (Table I)

TABLE I —*Showing for Certain Counties the Proportion per 1000 Total Dwellings having One to Three Rooms*

Highest		*Lowest*	
Northumberland	538	Isle of Wight	50
Durham	458	Middlesex	60
Yorkshire, West Riding	340	Surrey	61
Cumberland	252	Sussex, West	75
Yorkshire, North Riding	213	Sussex, East	87
Worcestershire	206	Devonshire	134
Warwickshire	199		
Yorkshire East Riding	195		
London	181		

Northumberland and Durham stand out in respect of their very high proportions of dwellings of the smallest type Not only so, but on the average these small dwellings are occupied by a larger number of families than obtains elsewhere But the data so far illustrated do not give us an adequate idea of housing conditions, and it is necessary to consider also

Size of Family in Relation to Number of Rooms Occupied

This distribution for England and Wales as a whole is shown graphically in Fig 1 It will be seen that in 1921 only 46 0 per cent of the private families occupied dwellings containing five or more rooms as compared with 49 6 per cent in 1911 This is a slight indication of the general tendency in recent years to occupy smaller houses or flats The proportion of four-roomed dwellings is almost the same at the two censuses , but it will be seen that the proportion living in smaller dwellings of one, two, or three rooms has increased in recent years

The average size of family has dropped by 5 per cent from 4 36 persons in 1911 to 4 14 in 1921, a natural result of the increase in the marriage-rate, along with the greatly reduced birth-rate and the heavy mortality in the war

To ascertain whether the population in 1921 was really rather less densely housed than in 1911, further details are needed, especially in view of the general declaration of house shortage throughout the country

We may first take the statement of *average number of occupants per room* in the entire country The relative proportions are shown in the following table, omitting persons living in tenements of over nine rooms It should be noted that in the enumeration of rooms kitchens are included, but not sculleries, bathrooms, or offices or shop rooms Thus stated the average results do not differ greatly at the two censuses (Table II)

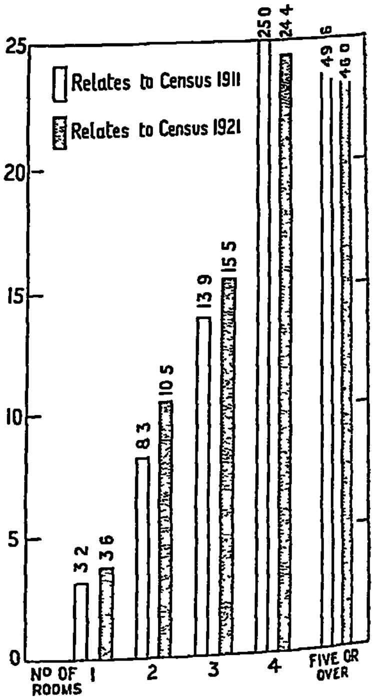
TABLE II —*Proportion per cent of the Total Population Living with (on an Average)*—

Per Room	*1911.*	*1921*
Less than one person	31 7	32 5
One person	15 0	16 1
One to two persons	39 1	38 4
Two to three persons	7 6	7 8
Three persons and over per room	1 5	1 8

It will be seen that for 9 6 per cent of the population there are more than two persons to a room The ratio of more than two persons to a room has been taken in 1921, as in the preceding census, as an approximate index of the prevalence and distribution of overcrowding

The utility of this ratio is undoubted, although it has been criticised It does not, of course, distinguish between large and small rooms, but it is probably the best measurement we have, at present, of relatively good or deficient housing accommodation The percentage 9 6 compares with 9 1 in 1911 More detailed figures than are given above show that, excepting families comprising only one person, for whom there is obviously no scope for improvement, " a deterioration has taken place for all sizes of family, including the larger families whose density was already approaching the region of overcrowding " The amount of worsening during the ten years is approximately 3 per cent

FIG. 1.



Comparison of Urban and Rural Districts

The distribution of families (per 1000 total families) according to the number of rooms occupied in 1921 is shown in Fig. 2 for London county boroughs, and rural districts in the aggregate respectively. It will be seen that the smaller units preponderate in London to a much larger extent than in the average of county boroughs and of rural districts This is doubtless in part due to the much larger proportion of lodgers in London to total population. In London the most frequent unit of occupation is three rooms; in boroughs and rural districts it is four rooms In London 13 2 per cent of the total families live in single rooms as compared with 3 4 per cent in the county boroughs and 0 7 per cent in the rural districts The approximation of the urban to the rural death-rate and particularly the approximation of the death-rate from tuberculosis in urban and rural areas, is noteworthy in view of these figures

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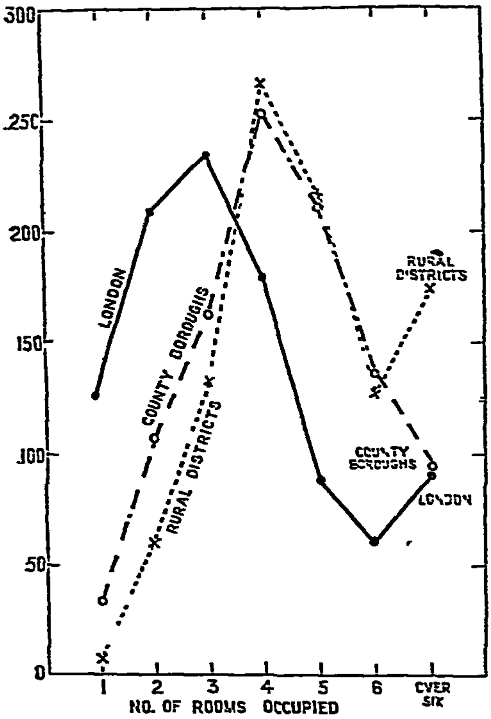
[1] H.M Stationery Office 1927 5s

FIG. 2.



The marked and consistent superiority of housing in the rural areas is further shown in Table III in which is given the proportion per 1000 total population living in private families with the average numbers of *rooms per person*, for dwellings with the greatest room-density

TABLE III

—	Census 1911 Less than half a room per person	Census 1911 Half to one room per person	Census 1921 Less than half room per person	Census 1921 Half to one room per person
London ..	178	409	161	413
Aggregate of—				
County boroughs	94	415	108	404
Other urban districts	74	383	81	380
Rural districts	66	360	65	350

Both in 1911 and 1921 the superiority of rural over urban housing of the housing in the smaller urban districts over those in the county boroughs and of that in the average for the county boroughs over London housing is most striking

But far and away the most important tables in this census report—tables which should be thoroughly studied by every medical officer of health and sanitary inspector—are Tables XXVI. and XXVII., which give for each administrative county, for each metropolitan borough, and for each of the larger towns its average condition as tested by various tests of adequacy of housing

Degree of Local Overcrowding

These tests are (*a*) the average number of families per dwelling; (*b*) the room-density or average number of rooms per person. (*c*) the last test in which variations associated solely with differences in size of families have been eliminated; and (*d*) the proportion of persons living in overcrowded conditions which is taken as represented by densities of less than one-half a room per person For our present purpose we take the last-named test It is evident that it is more likely to give valuable indications of circumstances affecting health than the three other above-mentioned tests For the country as a whole 9 6 per cent. of the total population is within the defined overcrowding limits In Northumberland and Durham which here also are the worst in the series, the proportion is 30 8 per cent and 29 5 per cent respectively; in London it is 16 1 per cent. in the West Riding 11 5 per cent in Stafford 11 1 per cent, in Cumberland 10 6 per cent in Denbigh 10 1 per cent, and in the North Riding of Yorkshire 9 7 per cent

Overcrowding in Metropolitan Boroughs—In London the following extremes of overcrowding—as defined above—are seen (Tables IV A and B)

TABLE IV A.—*Proportion per cent of Population Living more than Two per Room*

Worst	1911	1921	Best	1911	1921
Finsbury .	39 8	34 0	Lewisham	3 9 .	4·7
Shoreditch	36 6	32 0	Wandsworth	6 3 ..	6 8
Stepney	34 9	29 0	Hampstead .	7 1	6 5
Bethnal Green	33·2	27 8	Westminster	6·3	7 8
Southwark .	25 8	23 5	Woolwich	12 9 .	10 1
St Pancras	25 5	22 4	Hackney	12 4	11 5
Bermondsey	23 4	23 2	Greenwich	12 1	13 8

TABLE IV B—*Overcrowding in Large Towns*

Worst	1911	1921	Best	1911	1921.
Gateshead .	33 7	37 0	Northampton	1 1 .	2 7
South Shields	32 9	36 5	Oxford .	2 4	2 3
Newcastle-on-Tyne	31 6	33 6	Great Yarmouth	2 5	2 1
Tynemouth	30 7	34 4	Ilford . .	2 1	3 1
Sunderland	32 6	33 8	Luton .	3 1	3 7
St. Helens	17 0 .	21 0	Gillingham .	2 3 .	3 4
Wigan .. .	12 9	15 3	Derby .	1 9 .	3 5

The tables from which the above extracts have been made throw much light on the relative degree of room-density in different districts Their teaching is so obvious as to require little or no comment The comparisons between 1911 and 1921 are also interesting. In London the small reductions in room-density shown in most metropolitan boroughs are not so great as might have been anticipated in view of the reduced birth-rate. The worsening shown in the coal-mining and iron centres in the north is not surprising, as in these districts the reduction in the birth-rate has been relatively small There is abundant evidence in these important tables of the need for further housing provision especially for those who need two, three, or four rooms only.

Institutions in Relief of Housing

It is too little recognised that hospitals Poor-law institutions asylums, homes for cripples blind &c, house a considerable proportion of the total population at any given time and that were it not for this steadily increasing provision modern difficulties in housing would be immensely greater than they now are The relief thus given is the more significantly important. inasmuch as it is given on behalf of those who otherwise would suffer most by remaining in their exiguous homes and who if they remained there might injure the health or reduce the efficiency of those remaining at home The figures published in the census report give a clue to the amount of relief to housing thus achieved

The institutions whose numbers are tabulated comprise workhouses and other Poor-law institutions, homes for lunatics, &c , homes for cripples, blind, deaf and dumb, hospitals and convalescent homes, prisons and reformatory schools, and some others Only some of these are enumerated in Table V

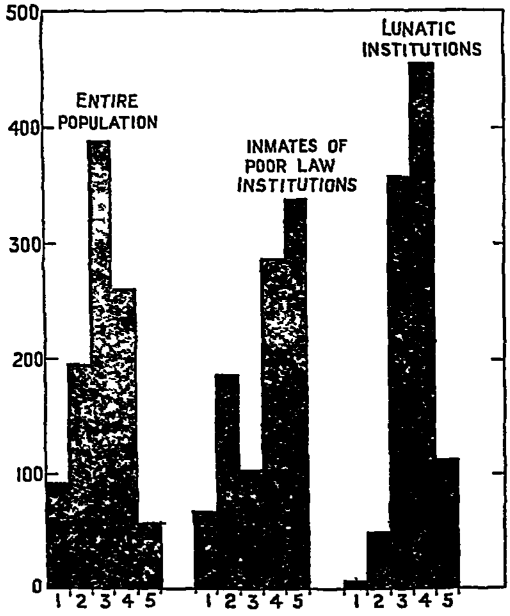
TABLE V —*Proportion per 10,000 of the Total Population of England and Wales who at the Census were Resident in Institutions (Inmates only)*

Workhouses and other Poor law institutions	49
Lunatics, &c	32
Hospitals and convalescent homes	28
Homes for cripples, blind, deaf and dumb	2 2
Reformatory schools	4 2

In addition prisoners comprised 3 per 10,000 of the population

The age-distribution of inmates of these institutions has much social interest, and we may in conclusion give this distribution for the most important of these (Fig 3)

FIG 3 —*Age-distribution per 1000 Males at all Ages in Poor-law Institutions and Asylums*



1 At ages under 5 2 5–15 3 15–40 4 40–65 5 Over 65

In the first set of columns is shown the age-distribution of the male population of England and Wales at five periods of life , in the second the same is shown for Poor-law institutions, and in the third for homes for lunatics It is clearly seen that the majority of patients in asylums is at ages 15–65, while the majority of occupants of Poor-law institutions are over 40 and especially over 65 years of age Old age pensions have reduced the proportion in institutions at these higher ages, but it still remains true that Poor-law institutions serve chiefly for the care of persons disabled by age combined with infirmity

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DUBLIN VICTORIA EYE AND EAR HOSPITAL —A new wing is being added to this institution and it will be opened a few months hence It is the only hospital in Dublin devoted exclusively to the treatment of diseases of the eye and ear, and the annual report shows that last year there were 1820 in-patients and 9905 new out-patients in addition to 2836 out-patients receiving further treatment

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OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

ANNUAL CONGRESS

(*Concluded from p 992*)

THE Thursday evening session was opened by a paper, read by Dr GORDON HOLMES, on

Tumours involving the Chiasma, excluding Pituitary Tumours

He said that when meeting with cases of intracranial tumour suggestive of a lesion of the chiasma it was usual to think of a new growth of the pituitary body He had noted that in a considerable proportion of these cases the tumour did not take origin in the pituitary itself , indeed in his experience 40 per cent of tumours causing these symptoms did not do so The other tumours which might compress the chiasma or otherwise interfere with its functions included tumours growing from the pedicle of the pituitary and of these there were two types (1) simple cysts of Radcliffe's pouch, (2) adamantinoma, a variety of epithelial tumour characterised by a peculiar arrangement of epithelial cells Or there might be tumours growing from the base of the brain, teratomata being common in this situation, or primary tumours of the choroid plexus, and of the third ventricle involving the chiasma Another type of tumour was that which arose from the meninges, the commonest being the endotheliomata Tumours might spring from the basisphenoid and involve the chiasma, or the basisphenoid might be the seat of malignant growths, such as primary sarcomata or metastatic carcinomata Or tumours—e g , aneurysms—might grow from vessels Dr Holmes quoted a number of cases in each group

Dr A W MULOCH HOUWER read a paper on

Keratitis Filamentosa and Chronic Arthritis,

in which he drew attention to the association between a form of conjunctivitis (later becoming keratitis) and arthritic disability of a chronic and lasting character, which proved very resistant to treatment

Mr J. GRAY CLEGG discussed the paper, and said he had generally used for the condition a mild application of borax and salt, with drops of paroleine When there were definite adhesions of the cornea he used ammonium chloride One of his patients had peliosis rheumatica, and there was an absence of tear secretion

Colonel H HERBERT read a paper on

Glass Membrane Formation in Iridocyclitis

It dealt with the question of the formation of a glass membrane in the anterior chamber, which he considered took place by means of cells which had migrated from the ciliary epithelium It could only be found in very chronic cases of iridocyclitis The paper was illustrated by a large number of microscopical slides

Mr TREACHER COLLINS discussed the paper and Colonel Herbert replied

Mr G F ALEXANDER sent two papers which were read, one on a new method of controlling the eye in the operation for cataract, the other on a factor in the causation of keratitis striata

Edward Nettleship Prize

The PRESIDENT presented this prize to Mr C Howard Usher in recognition of his original work which was, he said, of value not only to ophthalmology but also in a wider sphere If in the future eugenics should become a science it would be largely through such spade-work as that which had been done by Mr Usher

Ætiology and Treatment of Hypopyon Ulcer

The discussion of this subject occupied the whole of Friday morning

Mr J **Gray Clegg** said that in 27 years on the staff of the Manchester Royal Eye Hospital he had had 160,000 patients under his care, 9576 of whom had been in-patients Of the in-patients, 4 per cent were cases of hypopyon ulcer, and of the whole number 0 24 per cent Of the 399 cases, 77 per cent were males, 23 per cent were between 51 and 60 years of age, 19 per cent were over 61, 18 per cent were between 41 and 50, whilst 12 per cent were under 10 Between the ages of 21 and 30 the percentage was 8 In 53 per cent there was a definite history of trauma Miners and labourers were by far the chief sufferers, the miners accounting for 20 per cent of the cases and the labourers for 15 per cent The condition was not found in pit ponies, and was not caused by infection from underground stables, as the draughts of air were always forced towards those stables In the opinion of Maitland Ramsay, ulcus serpens formed 3 per cent to 4 per cent of all underground non-fatal accident cases Most of the subjects of this condition seen by Mr Clegg were below par in general health, and addiction to alcohol had a distinct influence in lowering resistance to infection, while it also hindered recovery The large number of cases in children he thought was accounted for by septic infection in debilitated subjects Such ulcers might be associated with infectious disease, but these cases seldom came to an eye hospital Conjunctivitis was present in 26 per cent of his cases, dacryocystitis in 13 per cent (MacNab gave the proportion of dacryocystitis as 40 per cent) All ulcers with hypopyon were due to the action of micro-organisms, and mostly the culprit was the capsulated pneumococcus of Fränkel and Weichselbaum, though others could cause the condition

Treatment —General treatment, said Mr Clegg, was very important Diet should be simple and nourishing, mild purgatives being given, and morphia or codeia might be needed to relieve pain Any defective teeth must be put right or extracted With regard to local treatment, if there was a definite purulent discharge a bandage retarded recovery by retaining the secretions and thereby bathing the ulcer region in toxic fluid Among the lotions which had been used were 1 in 10,000 hydrarg perchlor, zinc suplh gr 1 ad ℥ i, mercurophen 1 in 8000, formalin 1 in 2000 or weaker Among the drops used were argyrol, 10 per cent to 50 per cent, protargol 5 per cent to 10 per cent, dionin in strengths up to 10 per cent, adrenalin 1 in 1000 Of powders, iodoform, xeroform, nosophen, and airol had been employed Hydrarg perchlor had been used up to even 1 in 100 for direct application to the ulcerated surface only The consequent burning sensation, it was found, could be alleviated by instilling drops of holocain Another preparation having the same effect was trichloracetic acid in a 10 per cent or 20 per cent solution Others were solutions of nitrate of silver, absolute alcohol, pneumococcal serum, and hydrogen peroxide The application of dry heat to the lids by means of the Maddox electric pad, or moist heat by hot pads of lint repeatedly wrung out in hot water to which had been added a little starch, was beneficial Or heat could be directly applied to the ulcer by a cautery knob or loop at a dull red heat being held near the ulcer, thus drying its surface repeatedly For caustic effects, carbolic acid liquefactum was a favourite agent, as it did not penetrate the tissues too deeply A very accurate method was by means of a Paquelin's benzol vapour cautery Dacryocystitis when present must be dealt with When it was mild, in might suffice to wash out the lacrymal passages twice or thrice daily, or argyrol might be introduced into those passages But when there was much discharge or pressure on the sac, the best way of preventing reinfection of the ulcer was by total excision of it or by complete destruction of the mucous membrane When the tension was raised paracentesis was indicated Frequently the necrotic mass was scraped from the surface of the ulcer especially at its advancing edge A more heroic method was to make the Guthrie-Saemisch section, which lowered the tension and ensured a long-continued drainage of the anterior chamber, making it easy to deal with the hypopyon With regard to treating complications, iritis called for the vigorous use of atropine in the form of watery or oily drops If a case was going on well the hypopyon or pus needed no special treatment, but if it was large and fibrinous it must be evacuated In many cases the tension was raised, and then the aqueous should be allowed to escape very slowly, prolapse of the iris might occur if it escaped quickly

Prophylaxis —It could not be too much impressed upon workers that a watery or discharging eye was a serious affair, and that an ophthalmic surgeon should be seen at the first sign of trouble after an injury, however slight Risk of damage to the eye was largely reduced by wearing goggles

Mr S H **Browning** dealt with the subject from the bacteriological standpoint He said he had always found the pus of hypopyon to be sterile, and it had remained so until the time of perforation It was possible to imagine an infection so acute as to paralyse the defensive mechanisms of the eye, so that no hypopyon arose, and it might be such a low infection, and the response might also be so low, that hypopyon resulted Arguing thus, it seemed that hypopyon could be regarded as a sign of good response to the toxic stimulus He had asked ophthalmic surgeons of his acquaintance whether they considered the presence of a hypopyon in an ulcerated cornea as of serious prognostic significance Of 17 who were asked, 11 said they considered it made the condition a more dangerous one, four said it did not matter, two were doubtful The organism most frequently associated with hypopyon ulcer was the pneumococcus, and in order that it could become established on the corneal surface, that surface must have sustained some damage Probably the body causing the injury did not infect; infection was caused by the entry of the organisms already in the conjunctival sac It was of interest that it was rare for ulcers to occur in cases of acute pneumococcal conjunctivitis, or in its less acute form seen in babies Cultures should be taken from the advancing edge of the ulcer He suggested that a bacteriological examination should be made of all ulcers, this step might save many corneæ from drastic treatment later He had never seen the diplobacillus concerned in an intraocular infection The most virulent cases of hypopyon ulcer he had ever seen were due to the *Bacillus pyocyaneus*, and he believed it to be the worst organism which could affect the eye In some of the cases of pyocyaneus infection of the eyes he was able to trace the source to discharge from the ear Streptococci did not now seem to affect the eyes so often as formerly, and hypopyon ulcer due to staphylococci was, in his experience, rare, though he had seen a *panophthalmitis* due to *Staphylococcus citreus* Ulcers caused by the pneumobacillus were not uncommon He had not had any great success in treatment of hypopyon ulcers by bacteriological methods except in gonococcal infections in the adult He was not convinced that autogenous vaccines produced improvement In conclusion, he referred to the magnesium sulphate and hexamine treatment of hypopyon ulcers, the latter drug being given internally in doses of gr 10 thrice daily If irritation of the bladder developed the dose of hexamine was reduced

Mr M S **Mayou** showed a slide depicting a very early stage of pneumococcal corneal ulcer, which followed the entry of a foreign body The ulcer was cauterised with pure carbolic and did not spread The smear preparation was filled with pneumococci He described, by means of a series of slides, the development of these ulcers

Mr W H **McMullen** said these ulcers were now less common than 25 years ago In most cases this disease was preventable, therefore prophylaxis should have the first consideration It was especially important to protect the eyes from accidents in industry, and also that treatment for even slight injuries to them should be skilful He now employed the galvano-cautery in all hypopyon ulcers, except in cases of slight ulceration with little hypopyon The lotion he used was a half-saturated solution of magnesium sulphate, used as an eye-bath for five minutes every two or three hours He preferred not to bandage these eyes, as the warmth and immobility favoured bacterial growth The discussion was continued by Mr A C HUDSON, Dr FREELAND FERGUS, Mr EDGAR STEVENSON, Mr H MACNAB, Colonel A F MCCALLAN, Mr M HEPBURN, Colonel H HERBERT, Mr CHRISTIE REID, Major R E WRIGHT, Mr A L WHITEHEAD, Sir ARNOLD LAWSON, Mr J ROWAN, and Dr HUGH JONES

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MEDICINE AND THE LAW.

Parental Responsibility for Education of Defective Child

MANY years ago it was decided by the law courts that, when a husband was away at sea, his wife might be liable for neglecting the parental duty of sending her daughter to school Lord Coleridge, Chief Justice, pointed out that any other decision would mean that the children of a seafaring population might be left entirely without education Now there has arisen a further question of parental responsibility when the child is a mental defective and the father is in prison Under Section 53 of the Education Act of 1921 the normal duty of a parent to cause the child to receive sufficient elementary education is converted, when the child is defective or epileptic, into the duty to cause the child to attend a special class or school if there is one within reach of the child's residence, the section goes on to say that a parent is not to be excused from this duty by reason only that a guide or conveyance to the school is necessary The following section enacts that the local education authority, after consultation with the parent of a defective or epileptic child over 7 years of age, if satisfied that the parent is not making suitable provision for the child's education, may require the parent to send the child to a certified class or school of a suitable kind , if the parent fails without reasonable excuse to do so the local authority may apply to the magistrates for an order Last October complaint was made by the Somerset County Council that a woman living at Burnham-on-Sea had failed without reasonable excuse to send her defective daughter to a special school provided at Bishops Lydeard *The child, a girl of 12,* was at all material times residing with and was in the actual custody of the mother an important fact, because the Education Act defines the "parent" of a child as including every person who is liable to maintain or has the actual custody of the child The mother was stone deaf, the father was serving a sentence of penal servitude in Maidstone gaol The mother said she refused her consent because she thought the child would be better off at home in her own charge than at a school where she would be liable to punishment, she said the child could do housework and she believed the child was by reason of defective intelligence incapable of benefiting from instruction in a special school. In this belief she was confirmed by her doctor who gave evidence that the child was feeble-minded, of an emotional temperament, better kept at home in her mother's care, and more likely to benefit by association with normal children than with other defective childen at a special school The medical officer had certified the child to be defective and the magistrates, being satisfied that the certificate was correct, ordered the child to be sent to the special school at Bishops Lydeard A number of ingenious points were then taken on behalf of the mother on appeal It was argued that the parent meant the father if he was alive and his address was known, that the father had never been consulted by the local authority, had not been required to send the girl to the school, and had not refused consent or unreasonably withheld it It was also argued that the mother was acting with the bona fide intention of benefiting the child, that the mother had not unreasonably withheld consent, and that the medical officer's certificate was wrong The main argument was that the father, though undergoing penal servitude at Maidstone, was the "parent" for the purpose of the Act He was in prison, it was said but he had not ceased to be a father The King's Bench Division, however, was not impressed by this contention The local authority had to be satisfied under the Act that the parent was not making suitable provision *for the child's education* The Lord Chief Justice said it would be grotesque if this father were allowed to say that to his regret he was in a place where it was not possible for him to comply with the requirement of the statute The child's education could not be left neglected while the father completed his term of penal servitude Thus common sense prevailed, and the decision of the magistrates was upheld

Meat and Malt Wine

The same court on the same day gave an important decision on the sale of "Extract of Meat and Malt Wine" An inspector under the Sale of Food and Drugs Acts had prosecuted[1] a defendant at Salford *for selling him a bottle of extract* to the prejudice of the purchaser, and not being of the nature, substance, and quality demanded The bottle, which cost *4s 6d* , was labelled "Extract of Meat and Malt Wine—Guaranteed prepared from Liebig's Extract of Meat—This wine will be found invaluable as a stimulant to digestion—A tonic and a food—non-alcoholic" The city analyst of Salford certified that the sample contained 81 2 per cent of water, 16 4 per cent of total sugars, and 2 4 per cent of other extractive matter , in this last item was 0 06 per cent of phosphoric anhydride, indicating the possible presence of not more than 2 per cent of a mixture of equal parts of meat and malt extracts The certificate further stated that no change had taken place in the article which would interfere with the analysis, that a genuine meat and malt wine should contain at least 5 per cent of a mixture of equal parts of meat and malt extracts with a wine basis, and that the sample was not a meat and malt wine

As in similar cases heard in the courts *before,* the magistrate seems to have been misled by the fact that no standard of quality is officially fixed for extract of meat and malt wine Here was a sample certified to be 60 per cent deficient of the minimum *amount of meat and malt extract as well as* being entirely deficient of wine , but, as there was no statutory prescribed minimum, it was possible to argue that the meat and malt ingredient was present however disproportionately small and that its sufficiency or insufficiency was a mere matter of opinion Taking this view the magistrate dismissed the information The King's Bench Division, however, decided that the magistrate was wrong The magistrate erred in supposing that, merely because there was

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[1] See THE LANCET, 1926, ii , 972

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[1] See THE LANCET, 1926, ii, 972

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH

Swindon

THE following statistics are taken from the annual report for 1926 :—

Population, 57 320 Birth-rate, 17 1 Death-rates per 1000 of the population . all causes, 10 7 , tuberculosis, 0 70 cancer, 1 31 ; respiratory diseases with influenza 1 6; heart disease, 2 0 Death-rates per 1000 births neonatal, 23 , infant 48 , maternal from childbirth 7 1.

Dr Dunstan Brewer reports that 1926 was the healthiest year in the history of the borough in spite of unemployment and the coal shortage. The former has not exercised any tangible influence up to the present and the latter, he considers, was favourable to the public health because it improved the atmosphere Unemployment caused the amount of "free" milk for mothers and infants to be nearly doubled. Among general sanitary conditions there are three that require attention The littering of roads with waste paper, &c , chiefly originating from fish-and-chip shops , the fouling of the footways by dogs, which he thinks has been dealt with satisfactorily in other towns; and spitting Since the 1925 Meat Order came into force the carcass of every animal slaughtered in Swindon has been inspected, and the amount of condemned meat is about double what it was Butchers in towns where the Order is enforced complain of unfair competition from districts where it is ignored

During the year 392 new houses were erected. 21 by the corporation outside the borough , 100 additional municipal houses are under construction, 96 without and 4 within the borough. As the increase of the population was 440, the 392 new houses helped to diminish the housing shortage. There is still, however, a great call for houses of the cheapest and simplest construction, and the only solution appears to be the provision by the community at an unremunerative figure of houses for people with large families and small incomes, amongst whom overcrowding is not being diminished Although Swindon has no slums a fair number of houses ought to be demolished when possible. Many, for example, lack facilities for food storage and have no properly placed sinks, nor w c 's with flushing apparatus Two favourable factors in Swindon are the large proportion of houses owned by the occupiers and the supply of cheap electricity.

The hospital accommodation is inadequate. The Victoria Hospital (36 beds) takes mainly surgical cases The Great Western Railway Hospital (12 beds) has a temporary building in course of construction to contain 30 beds The maternity hospital (13 beds) is to be replaced by a better one. The isolation hospital has 70 beds, the venereal diseases hospital 6 beds, and the small-pox hospital 12. The most urgent need is for medical beds, but provision is also required for special departments—nose, throat, ear, eye, &c.—and for mental patients not suitable for an asylum. At the end of 1926 it was decided to apply the full service available for school-children, including dental, orthopædic, ophthalmic, and throat treatment, to ex-babies The new maternity hospital will include a six-bed ward for disorders of infancy.

At the maternity hospital there were 222 confinements One case notified as puerperal fever and 11 of puerperal pyrexia all ended in recovery. There were 3 maternal deaths and the 15 stillbirths included 5 breech presentations and 3 antepartum hæmorrhages One infant developed pneumococcal pneumonia on the third day, and it is thought that the infection was brought by the father from a house where there was a case Dr. Brewer emphasises the need for better facilities for treatment of puerperal insanity Three women with this condition were removed to the fever hospital, were treated without certification, and left the hospital cured without themselves or anyone else knowing that they had been temporarily insane. Fortunately they were also notified as puerperal sepsis Under ordinary methods of treatment these cases are either left at home or removed to an asylum and in both events their future lives are probably wrecked Antenatal work makes progress There were 261 new cases and 45 old cases on the books, accounting for nearly a third of the total births Dr. Brewer records the deaths of 11 women in connexion with childbirth during the year (the death-rate given above being calculated on the Registrar-General's classification of 7 deaths from this cause), and describes maternal mortality as " the blackest spot in the whole of the practice of medicine " He insists that " the first business of any endeavour is to explore the position to sweep away all subterfuges, and reveal the true facts without any attempt at prevarication ' Such a policy gave good results in dealing with ophthalmia neonatorum. He points out that 7 of the 11 deaths could have been prevented by timely interference Bacterial examination in the eight cases of ophthalmia neonatorum revealed the gonococcus in three cases, the pneumococcus in two cases, and a doubtful bacillus in one case In two cases no organism was found, but Dr. Brewer points out that not infrequently the gonococcus cannot be found in the acute stage, but is found later. He suggests that the occurrence of the pneumococcus as a cause of ophthalmia is a ' point of considerable interest."

As in previous years a careful investigation was made of all the deaths which occurred under the age of 17. The 49 infant deaths when reclassified included 18 due to prematurity, 11 to ill-feeding, and 2 to congenital syphilis. Of the 45 cases of scarlet fever notified since April 1st, 1926, 11 were traced to one carrier and 7 to another One case of human glanders occurred in a person who had nothing to do with horses : the source of infection could not be traced. Notification of tuberculosis during the last three years has been carried out efficiently. The pathological laboratory of the public health department was completed during the year and bacteriological examination of milk is to be undertaken.

SCHOOL MEDICAL SERVICE

Name of district	No on roll.	Av elem. school attendance	No of routine children examined	No of special examinations and re-inspections	Percentage of children found on routine examination requiring treatment.*
Birmingham	145 456 (e) 7,018 (s)	—† —†	44,364 5 300	64 836 410	28 28 —
Leamington	3,416 (e)	—†	1,070	1,976	10 3

* Excluding uncleanliness and dental defects † Not given
(e) Elementary schools (s) Secondary schools.

Birmingham

The outstanding feature in the development of the year was the opening of the new clinic at Sheep-lane, a model of its kind in design, accommodation, and

SOUTH AFRICA

(FROM OUR OWN CORRESPONDENT.)

Hookworm Infection on the Rand

THE presence of hookworm infection in the gold mines of the Witwatersrand has recently been brought to notice. The disease has been introduced by East Coast natives imported into the Union, and the infection has apparently spread to British South Africa natives and to a few Europeans. In 1911 it was reported that 90 per cent. of Mozambique native workers in the mines and on the cane-fields were infected, but no evidence of soil infection was obtainable and it was presumed that the larvæ were killed in the acid water percolating through the soil. A report has just been published by Prof. W. O. Fischer and Dr. A. J. Orenstein giving the result of investigations they have made on the subject. These investigations are not quite completed, but so far they demonstrate many important points.

No evidence has been found to back up the surmise that the acidity of the water in the mines destroyed the larvæ. Investigation of fæces of patients admitted to the City Deep Native Hospital showed that 19 per cent. of the patients were infected with hookworm. In the majority of cases there were no clinical manifestations which would lead one to suspect infection. Marked anæmia was present only in a small number of cases and in only one was the general condition of the patient such as to point definitely to a clinical diagnosis of hookworm infection. It was further shown that of the East Coast natives 25 per cent. were infected, whereas of the British South Africa natives only 8.8 per cent. were infected. Investigation of the soil of four mines has been carried out and in all cases hookworm larvæ were found either on the floors of latrines, in the vicinity of latrines, or near drinking-water containers. In one case larvæ were found under the tram-rail of a main drive. Practical prophylaxis so far as mine-workers are concerned therefore amounts to protecting the mine soil against pollution, and to mass treatment of infected natives. One of the recognised methods of prophylaxis—i.e., the wearing of boots as a protection against infection—can be little used under the local mining conditions.

At a meeting of the Transvaal Mine Medical Officers' Association this report was discussed and the following recommendations were made:—

1. That all East Coast natives recruited for mines be treated with carbon tetrachloride prior to distribution to the mines, and that a similar treatment be given at the mines a week after recruitment. Voluntary East Coast natives to be included. The treatment of British South Africa natives to be deferred for future consideration. Estimated cost of this treatment is £1500 per annum.

2. That all underground and surface bucket latrines be constructed in conformity with the principles recommended in the report, and existing latrines not conforming thereto be immediately reconstructed.

3. That the sumps of these latrines be daily cleaned and freely swabbed out with a 2 per cent. solution of an efficient coal-tar disinfectant, and that a half-inch layer of the disinfectant be left in the sump. The floors, walls, and perches of the latrines to be swabbed daily with the same disinfectant.

4. That more stringent supervision be exercised to prevent natives defæcating in disused stopes.

5. That fæces from underground be removed only in hermetically sealed buckets.

6. That floors and walls of cages and skips, in which buckets are hauled, be effectively swabbed out with a 2 per cent. solution of coal-tar disinfectant immediately after the completion of the haulage, and before they are used for other hauls.

7. That 2 per cent. coal-tar disinfectant be heavily sprayed daily on the foot-wall in the immediate vicinity of latrines and drinking-water tanks.

8. That all East Coast natives admitted to hospital receive at least one carbon tetrachloride treatment before discharge from hospital.

Pneumonic Plague

On April 7th a man was removed from the R.M.S. *Armadale Castle* as a case of suspected pneumonic plague. The patient died and the diagnosis was confirmed post mortem. The mail-boat was put in quarantine at once and passengers were warned that they sailed at their own risk. Since then wireless reports show that there have been no further cases on board. The exact source of infection has not been traced, but plague is still present in certain areas of the Union—particularly in the Orange Free State and in the north-eastern part of the Cape Province—although the coastal belts are reported free of infection. The Department of Public Health keeps up a continuous campaign against rats and gerbilles, but the rodent question is a very difficult one in a country of this size.

Sir Edmond Stevenson

The death occurred at Rondebosch, Cape, on April 16th of Sir Edmond Sinclair Stevenson, J.P., F.R.C.S. Edin., in his seventy-sixth year. Sir Edmond Stevenson was the son of William Ford Stevenson and was born in 1850 at Geneva. In 187-, after studying medicine at the University of Edinburgh, St. Thomas's Hospital, and then in Paris, Brussels, and Berlin, Sir Edmond Stevenson first came to this country, where he eventually became one of the leading members of the profession. He began by practising at Malmesbury, Cape, and later moved to Rondebosch. Sir Edmond Stevenson was medical adviser to Cecil Rhodes and to Dr. Jameson, as well as being a great personal friend of Rhodes. He served in the Transkei native campaign, the Boer War, and the Great War, and was knighted in 1905. He took a great part in the public and social life of the Peninsula. He leaves a son and two daughters.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Medical Registration

THE Medical Practitioners Bill, of which a summary was given last week, passed its second reading in the Dail on May 4th, and has since been considered in committee. On the motion for the second reading Mr. McGilligan, the Minister in charge, explained the provisions of the Bill, and the motion was carried unanimously and without debate. Further study of the Bill brings to light some points omitted in the abstract given last week. Casual vacancies on the Free State Council are to be filled as they occur by the body in whose representation the vacancy has occurred, but this does not apply to casual vacancies among the direct representatives of the profession, which are to be filled by election by the Council itself. Such a procedure is vicious in two respects. It disfranchises the registered practitioners partially or completely, perhaps for several years, and it may exercise an improper influence on the choice of the practitioners at the next regular election. It is not unlikely that this clause will be amended before the Bill becomes law.

In the agreement between the authorities of Great Britain and those of the Free State, which forms the foundation of the Bill, there is a hiatus which may lead to misunderstanding in the future. It seems to be assumed that the General Council will no longer have disciplinary control over persons registered in the General Register who practise in the Irish Free State. There is no such proviso in the agreement, and it seems as if it would still be the duty of the General Council to investigate the conduct of persons registered in the General Register, wherever they reside, when complaints arise.

Notwithstanding some defects, medical opinion generally looks favourably on the Bill, and it is realised that it is the fruit of much pains and care on the part of the responsible Ministers.

Local Appointments in the Irish Free State

The Local Appointments Act, 1926, took from local authorities the power of appointing officers except on the recommendation of a central authority set up

INVESTIGATION OF INFECTIOUS DISEASE

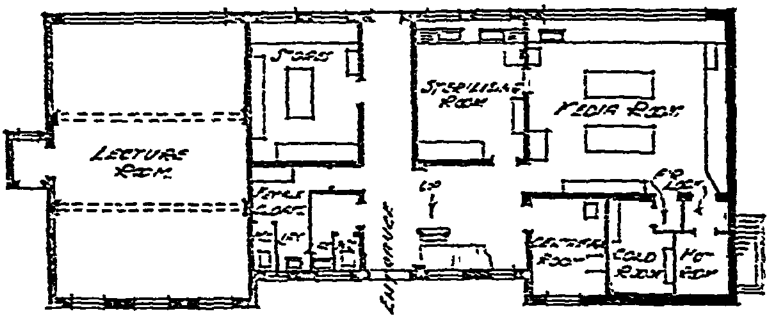
OPENING OF M.A.B. LABORATORY BY THE MINISTER OF HEALTH

In 1913 the Metropolitan Asylums Board appointed a research pathologist whose function should be to investigate the ætiology of infectious disease rather than to deal with immediate demands for preventive precautions. A laboratory was provided first at the Lister Institute and later at the National Institute of Medical Research, Mount Vernon, and work was continued under the general supervision of Sir German Sims Woodhead until his death in 1921, after which the Board invited a scientific advisory committee to exercise general supervision over its research and bacteriological laboratories. On the recommendation of this committee the Board in 1924 decided to make each hospital self-contained by the appointment of a skilled pathologist with a properly equipped laboratory at his disposal. As a first step two such laboratories have been instituted for the more special branches of pathological work and for research. A temporary building has been adapted at the North-Eastern Hospital to serve the needs of institutions in the North of London, whilst new laboratories have been erected at the Park Hospital, Hither Green, S.E., to form the southern group laboratory and to be the headquarters of Dr. J. E. McCartney, who in April of last year took up his duties as the Board's Director of Research and Pathological Services. On Monday last, May 9th, the new buildings at Hither Green were formally opened by Mr. Neville Chamberlain, Minister of Health, in the presence of a distinguished gathering.

Mr. Francis Morris welcomed Mr. Chamberlain on behalf of the Metropolitan Asylums Board, of which he is chairman. After referring to the misleading title under which the Board disguised its activities from the public he pointed out that it had over 8000 beds in hospitals for infectious diseases, and that when there was last an epidemic of scarlet fever and diphtheria the number of patients under treatment was 9300. This enormous amount of material gave a great opportunity for investigation and it was the Board's intention to carry out research on a larger scale. The problems of rheumatism in children and of encephalitis lethargica were being studied, but an even bigger problem was presented by measles. Whilst the type of scarlet fever seemed to be growing milder the virulence of measles was increasing. Taking the death-rate for the last 15 years it would be seen that of every million people dying 251 died from measles and only 42 from scarlet fever. As many as 35 000 cases of measles occurred among London school-children in one year.

Mr. Neville Chamberlain agreed that the name of the Metropolitan Asylums Board was not altogether enlightening; it was in fact difficult to dissociate it from some suggestion of dementia, although, of course, nothing could be more unfounded. Those who really knew were aware that the M.A.B. was the great public health hospital authority in London, having under its control about 28 different institutions. Huge as was this establishment it could not be said to be too large; last year, he believed, over 33 000 cases of infectious diseases were notified in London alone, excluding tuberculosis. Whilst the M.A.B. was known throughout the country as a model of what an authority should be in its provision for the isolation and treatment of these infectious diseases

PLAN OF LABORATORIES

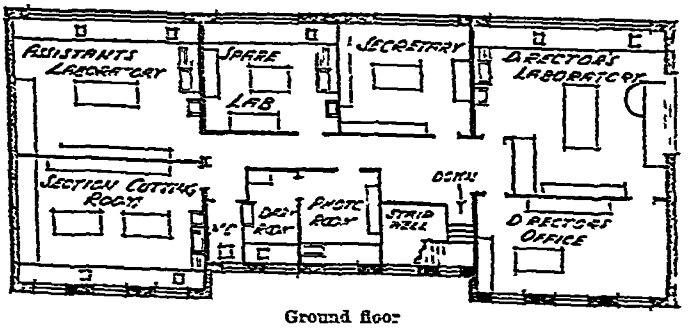


First floor

it could, he thought, be equally well acclaimed as a model of what administration could be. It must nevertheless remain a fact that the maintenance of all these hospitals was very expensive, and that, however economically it was done, its expense must substantially add to the burden of the rates.

There was another aspect of this economic question. He had been a manufacturer long before he was a politician, and he recollected that one of the objects constantly before the manufacturer was to try to find means of discovering flaws in raw materials before much time and money had been expended in converting them into finished articles. Not only had he to try to find means of avoiding the flaws but he had to dispense with what were called wasters. In human experience too there were wasters. He supposed that broadly speaking 5 per cent. of the children born in London died from an infectious disease before they reached the age of 20, and of those who survived an unknown percentage were crippled by having had these diseases. It was necessary to consider the waste caused by this premature death of people who could never make any contribution to the common life. All the care of their parents, all the education, the service of water, gas, light, recreation, and the rest of it—all this was to be spent on children who were going to die before they reached the age of 20, just as it had been spent on the others who were afterwards going to pay their contribution. If this could only be prevented there would be a substantial diminution in the burdens which the Board was bound to throw on the ratepayers of London.

When he thought of all the money spent on isolation hospitals and on treatment of infectious diseases, it seemed to him extraordinary that more had not been done to discover their cause and the means of their prevention. As a member of a public body years ago it had been his duty to inspect infectious hospitals. On the first occasion he had asked his guide what was the cause of scarlet fever.



Ground floor

scope, as Sir Humphry Rolleston made clear at the inaugural ceremony[1] In his report Dr G A Auden traces the history of the distribution of clinics showing how present needs are being met and provision made for future development, a short review is given of the charitable organisations which cooperate with the school service in rendering aid to ailing children In spite of expansion in every branch of remedial and preventive work the percentage of children requiring treatment remains high, no doubt many of the ailments are temporary or trivial, but their number is an indication of the need for commencing preventive and remedial measures before school entry

Some interesting observations are made in the dental section of the report Considering the greater activity and duration of sunshine in New Zealand and the undoubted greater richness of antirachitic factors in the average dietary there, Dr E H Wilkins was surprised to find a lower incidence of dental caries in Birmingham than in New Zealand He has now correlated the incidence of dental decay with that of rickets, as evidenced by bony deformity of the chest wall in children of the 5–6 year old group, and comes to the tentative conclusion that rickets predisposes to decay of the teeth

Discussing rheumatic infections in school-children, Dr. Auden estimates that 1 5 per cent of the elementary school population in Birmingham give evidence of heart disease, and Dr A P Thomson, by aid of an excellent map, shows the grouping of cases along the valleys of the Rea and the Hockley Brook It will be remembered that Dr F C Shrubsall found a similar grouping of rheumatic cases along the lines of the old watercourses in London The Children's Hospital is now acting as a sort of central bureau and clearing-house for all cases of rheumatism, working in cooperation with the Baskerville Home which has been enlarged to 90 beds

Dr Jessie J Stooke finds that left-handedness is present in Birmingham school-children in the proportion of about 1 to 36 and that it is almost twice as common in boys as in girls Dr Thomson's account of the special schools shows how closely associated these institutions are with the Children's Hospital, an excellent arrangement whereby provision for treatment is amply assured

Leamington

Dr W L Goldie deplores the large proportion of children (68 per cent) who are unvaccinated and the position is apparently becoming worse as the proportion of unvaccinated is even higher in the new entrants The dental work is rapidly increasing, the number reporting for periodical inspection at the clinic being over five times that of 1920, more of the dentist's time is given to treatment and less to inspection, while fillings have risen from 0 4 to 0 8 and extractions have fallen from 3 to 2 per child Except for the dental clinic and one for minor ailments the treatment of school cases is not carried out by the education authority directly, for the Warneford Hospital deals with tonsils and adenoids, defective vision, and ringworm cases This hospital also makes up for the absence of a complete orthopædic scheme by providing a well-equipped and up-to-date massage and electrical department Dr Goldie relates an interesting case of extensive developmental defect of bone involving especially the femora and gives an account of cardiac disease in a family affecting five out of eight children All these children were anæmic and undersized and had suffered from measles, scarlet fever, and whooping-cough, but not from rheumatism, such a condition might improve under an open-air regime, but unfortunately there is no open-air school or special school of any kind in the borough

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED APRIL 30TH, 1927

Notifications —The following cases of infectious disease were notified during the week —Small-pox, 277 (last week 358), scarlet fever, 1105, diphtheria, 671, enteric fever, 45, pneumonia, 1059, puerperal fever, 35, puerperal pyrexia 105, cerebro spinal fever 14, acute poliomyelitis. 11, acute polio-encephalitis, 1, encephalitis lethargica, 32, continued fever 1 dysentery, 9, ophthalmia neonatorum 146 No case of cholera, plague, or typhus fever was notified during the week

The cases of small-pox were notified from the counties of Cornwall 1 (Liskeard), Derby 8, Durham 121, Lancaster 2, Middlesex 8 (Hendon), Northumberland 15, Nottingham 2, Yorks North Riding 1, West Riding 62, Monmouth 57 The Hendon cases up to date number 9

Deaths —In the aggregate of great towns including London there was no death from small-pox nor from enteric fever 68 (0) from measles, 5 (1) from scarlet fever, 41 (11) from whooping-cough, 31 (11) from diphtheria, 51 (9) from diarrhœa and enteritis under two years, and 71 (18) from influenza The figures in parentheses are those for London itself Since this report was made up 5 of the cases of small pox reported from Hendon have proved fatal

SMALL-POX IN HENDON

We are indebted to Dr T S McIntosh, medical officer of health for the Hendon Urban District Council, for the following notes on the outbreak of small-pox there —

CASE 1 —Male aged 47, vaccinated in infancy Was comparatively mild case and is now convalescent Although this was not a severe case, it was not of the very mild type prevailing in certain parts of England at the present time

CASE 2 —Wife of Case 1, age 42, vaccinated in infancy Was a severe case, but I understand is now convalescent

CASE 3 —Daughter of Case 1, female, aged 16, unvaccinated Very severe case Confluent fatal case

CASE 4 —Daughter of Case 1, aged 8, unvaccinated A severe case, but doing well, and is expected to recover

Cases 5, 6 7, and 8 were workers in laundry to which linen from the family containing the first four cases was sent before the disease was recognised

CASE 5 —Female, aged 38, unvaccinated Very severe case Confluent, fatal

CASE 6 —Female, aged 15, unvaccinated Very severe case Confluent, fatal

CASE 7 —Female, aged 23, vaccinated in infancy Rapidly fatal case of hæmorrhagic small-pox This patient gave birth to a premature live child on the morning of the day on which the diagnosis was made The severity of the case is probably partly accounted for by the complication of pregnancy and parturition

CASE 8 —Female, aged 21, unvaccinated Moderate case Doing well and is expected to recover She was vaccinated after the onset of the first symptoms The vaccination was successful, the vesicles appearing about the same time as the small-pox eruption

CASE 9 —The new-born child of Case 7, female Developed papules a week after birth and died on the fifth day Was successfully vaccinated the vaccination vesicles appearing about the same time as the small-pox eruption

Dr McIntosh adds that the source of infection of Case 1 has not been traced

THE MEDICAL PROFESSION IN PALESTINE —At the recent conference in Jerusalem of the Jewish Medical Society of Palestine it was stated that there are now 510 physicians in Palestine, 373 being Jews, 10 Arabs, and 123 Europeans About one-third of the Jewish physicians are women

POST-GRADUATE MEDICAL TEACHING IN GLASGOW. The programme of the summer session has now been issued The teaching facilities comprise (1) a general medical and surgical course, (2) a certain number of special clinical courses, and (3) clinical assistantships The first is a whole-time course occupying the last two weeks of August and the first two weeks of September, and is arranged to interest general practitioners Clinical assistants are appointed for periods of three months, but their work need not necessarily occupy the whole day They will have facilities for intimate study of cases, under supervision, and for detailed investigation, but will not be permitted to treat patients Further information may be had from the Secretary, Glasgow Post-Graduate Medical Association, University of Glasgow

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[1] THE LANCET, 1926, ii, 687

Correspondence.

"Audi alteram partem"

LOCAL EPILEPSY

To the Editor of THE LANCET

SIR,—Dr Gordon Holmes's Savill Memorial Oration in your issue of May 7th makes me think that it will interest your readers to learn that Richard Bright, just upon a century ago, knew a good deal about local epilepsy

He says [1] —

> "As far as I have been able to infer from my own observation, I should say that the organic causes of epilepsy, connected immediately with the brain, are more frequently such as affect its surface, than such as are deep seated in its substance"

He then tells us that thickening of the skull or of the membranes, or a tumour on the surface of the brain will cause epilepsy, and he records cases in support of his contention He describes "the paralytic condition which remains after the attack," and he maintains that from the symptoms the situation of lesions in the cerebral nervous system can be foretold Particularly important in connexion with epilepsy is the case of a man who had fits of the right side Bright [2] says —

> "I now gave it as my opinion that these fits were owing to some local disorganisation affecting the membranes and cineritious portion of the brain on the left side
> My reason, then, for supposing that the epileptic attacks in this case depended rather on a local affection was the degree of consciousness which was observed to be retained during the fits"

Although he was aware of the value in diagnosis of retention of consciousness, yet the context shows that he knew that consciousness may sometimes be lost during fits due to organic disease

A second paper,[3] which shows that Bright knew where the lesion was in ordinary aphasia, concludes thus —

> "The symptoms which arise in cerebral and spinal disease are actually the results of the lesions which the different parts of the nervous system have suffered"

I think we may with justice say that Bright was one of the earliest enunciators of the doctrine of cerebral localisation

I am, Sir, yours faithfully,

May 8th, 1927 W HALE-WHITE.

TESTS FOR DRUNKENNESS.

To the Editor of THE LANCET

SIR,—I am not concerned with the differences of opinion as between Dr Southgate and Sir William Willcox on this question, but as a member of the committee which issued the report I am keen on accuracy It is no doubt an amusing pastime to set up Aunt Sallies and then to proceed to knock them down Unfortunately many of your readers—unacquainted with the details of the report—are not in a position to recognise the game

Dr Southgate says "that for the committee to announce as a test the smell of alcohol in the breath is unsound and utterly unscientific" When Sir William Willcox replies that the committee never pledged itself by any statement in its report to being able to find any smell in alcohol, and that the smell of alcoholic liquor in the breath was considered of value only as an indication that the person had recently consumed alcoholic liquor Dr Southgate calls the reply a quibble Then again, Dr Southgate asks for "the source of evidence which proved conclusively to the committee" that "in the performance of complex occupational acts such as the driving of a motor-car an experienced driver might be little affected by relatively large amounts of alcohol since his long experience of driving had caused his control of his car to become almost automatic" As the committee's report contains no such statement the question does not arise Possibly we shall be told that this reply also is a quibble

May one in return venture to ask Dr Southgate certain questions He writes, "surely it will be of service to the presiding magistrate to be able to state from a quantitative analysis of the urine that the accused must have taken at least so much alcohol" As the magistrate is concerned only with determining whether at the time of the event the accused was "drunk" (as defined by the committee in its report) of what value will it be to know this? Does Dr Southgate suggest that a certain well-defined concentration of alcohol in the urine can be taken as the index of being "drunk" for all persons at all times and under all circumstances? If so will he name this concentration, and will he say that a less concentration can be taken as the index of not being "drunk"? But if he is not prepared to do so, then wherein does he differ from the committee which considered this concentration inquiry was of "great value from a scientific point of view," but not to be practicable for the purpose of defining "drunk"?

I am, Sir, yours faithfully,

Hove, May 7th, 1927 E ROWLAND FOTHERGILL

MEDICAL DEFENCE

To the Editor of THE LANCET

SIR,—We are directed to request that you will kindly publish the following statement with regard to the circumstances in which the Council of either of the two English Defence and/or Protection Societies may be prepared to advise and/or defend and/or indemnify a member

Subject to the provisions of the Articles of Association the Council may on application from a member who is in benefit—

1 Advise on any matter connected with medical practice

2 Initiate or defend or assist in defending proceedings where a question of professional principle is involved

3 In the event of an adverse verdict, or of a settlement out of court, provide indemnity against damages and costs of the other side

4 Defend or initiate and carry through proceedings to vindicate a member's professional interests, honour, or character whenever they have been threatened or jeopardised

5 Defend and/or indemnify a member in proceedings brought against him in respect of the act or omission of (*a*) a partner who is a member of any other defence or protection society with whom a reciprocal arrangement has been entered into, (*b*) an assistant who is a member of any other defence or protection society with whom a reciprocal arrangement has been entered into, (*c*) an assistant not himself a member of any defence or protection society, provided that the member has paid an additional annual subscription of 10*s*, (*d*) a locum tenens, whether a member of any defence and/or protection society or not, (*e*) a subordinate medical officer, including a house surgeon or similar hospital medical officer, whether a member of any defence and/or protection society or not, (*f*) a non-medical assistant or subordinate, such as a nurse, dispenser, X ray operator, masseuse, or laboratory assistant, save in a case where in the opinion of the Council such non-medical assistant or subordinate was with the sanction of the member, whether express or implied, carrying out, (i) a duty which should only be undertaken by a medical practitioner, or (ii) without supervision a duty which should only be undertaken by a non-medical assistant or subordinate under the orders and direct supervision of a medical practitioner

We are, Sir, yours faithfully,

HUGH WOODS,
General Secretary,
The London & Counties Medical
Protection Society, Ltd,
Victory House,
Leicester square, W C

JAMES NEAL,
General Secretary,
The Medical Defence Union,
Ltd,
49, Bedford-square
W C

May 7th, 1927,

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[1] Reports of Medical Cases, 1830 ii, 514

[2] Guy's Hospital Reports 1836 i 9

[3] Guy's Hospital Reports, 1837, ii, 279

and, to his astonishment, had bowled him out first ball Even now it was impossible to be sure of its cause, some medical men believed that they had discovered the villain of the piece, whilst others thought that the wrong party was suspected There was still a great deal of research to be done to find out what really was the cause Although it might not be so mortal a disease as it was some years ago, nevertheless scarlet fever remained a great tax on our resources, the average stay in hospital of a scarlet fever patient was about eight weeks Those who were doing research on scarlet fever were turning out armies of anti-reds by way of reinforcements to the regular forces of the body, and if by so doing they could shorten, by even a week, the patient's stay in hospital, it would considerably relieve the accommodation for patients

A great deal of work had been done on diphtheria but there, he thought, the party had been arrested, found guilty, and convicted, and to-day, as a consequence, not only had the treatment of the disease materially improved, but advance had been made on a still more profitable course—we had begun to find out how to make people immune from the attacks of the disease We had been able entirely to prevent its incidence and to check and control it even in remote parts of the country As a result of all this the case-mortality from diphtheria in London had fallen from about 13 per cent at the beginning of the century to under 4 per cent at the present day He thought the results achieved against these two diseases were encouraging enough to show that money spent on the regular provision of facilities for research was a good investment The laboratory which he had just inspected was not particularly magnificent either in its appearance or its appointments, it was designed on strictly business principles But to the eye of imagination there were possibilities, and time would make it far more interesting than many a famous monument As the Minister responsible for the department whose chief duty was to try to reduce the necessity for any such Minister at all, he most heartily congratulated the Board upon its enterprise and on the infinite care and pains taken to ensure the success of the experiments that would be done Money had been spent on the things that really mattered

The Minister then declared the laboratories open and a vote of thanks was proposed by Canon Sprankling (Chairman of the Infectious Hospitals Committee) and Sir D'Arcy Power, a member of the Board

The visitors next proceeded to inspect the laboratories, over which Mr Chamberlain had previously been conducted by Dr McCartney.

The Laboratories and Their Work

There are two buildings and the cost of their erection and equipment was about £13,500 The larger, of which two plans are shown on page 1049, measures 87 feet long by 36 feet wide and contains a lecture room for the use of students attending the hospital's practice There are bacteriological, pathological, biochemical, and photographic sections, an internal telephone system links up all the main rooms, and binocular instruments have been secured where possible in order to reduce fatigue The smaller building, a short distance from the laboratory, is the animal house and has rooms for keeping stock animals, experimental animals, and fodder, for washing up, and for inoculations

The Scientific Advisory Committee to the Metropolitan Asylums Board consists of Dr F H Thomson (chief medical officer, Infectious Hospitals Service), Sir George Buchanan, Prof H R Dean, Dr C M Wenyon, Prof J C G Ledingham, Prof Hugh MacLean and Prof Major Greenwood The director and assistant director of research and pathological services are Dr J E McCartney and Dr William Mair, and the assistant pathologist is Dr V D Allison. Although the Scientific Committee recommended the present reorganisation of the Board's laboratories and is convened to discuss any large piece of investigation proposed, it will not suggest the line of work to be pursued

The Services.

ROYAL NAVAL MEDICAL SERVICE

Surg Comdrs W G Edwards and G C Cross are placed on Retd List with the rank of Surg Capt

Surg Lt-Comdr G W Woodhouse to be Surg Comdr

M L McCauley and L A. F Wiles to be Surg Lts

ROYAL NAVAL VOLUNTEER RESERVE.

Surg Lts G A Clark and R H O Robinson to be Surg Lt-Comdrs

ROYAL ARMY MEDICAL CORPS

Capts A E Richmond, T Young, J M Mackenzie, and R T Cox to be Majs

Capts H M Hart-Smith and J W Darling to be temp. Capts, and temporarily relinquish the rank of Capt

TERRITORIAL ARMY

Capt C D Walker resigns his commn and retains his rank

Capt R Ward to be Lt-Col and to comd the 128th (Wessex Fd Amb)

Capt J F O'Grady, from the Gen List, to be Capt

Lt L N Jackson, late R F A, Spec Res, to be Lt

Lts P Mumford and W H Gratrix, from the Gen List, to be Lts

Hygiene Companies —Capt J Cohen, from the Gen. List, to be Capt

The King has conferred the Territorial Decoration upon Lt-Col L A. Harwood and Maj W. F Mackenzie

ROYAL AIR FORCE

Flight Lt R S Topham is placed on the retired list at his own request

Flight Lt L Game is transferred to the Reserve, Class D2, and is employed with the Regular Air Force for a period of one year

INDIAN MEDICAL SERVICE

The King has approved the retirement of Lt-Col A F W King

ROYAL ARMY MEDICAL CORPS WAR MEMORIAL

A service of dedication of the stained glass window which completes the Royal Army Medical Corps War Memorial in Westminster Abbey will take place on Sunday, May 22nd, at 4 15 P M, in the nave of the Abbey No tickets of admission are required, but subscribers to the memorial fund and others interested desiring reserved seats for the 3 o'clock evensong preceding it should apply by letter to Major-General H B Fawcus, C M G, D S O, Room 313, War Office, Whitehall, S W 1 Uniform need not be worn at the service of dedication

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EXTENSION OF HULL ROYAL INFIRMARY—It is proposed to provide an annexe to this hospital at a cost of £150,000 Mr Philip B Reckitt has given a site of 50 acres and £5000, and Mr T R Ferens, Sir H Gamman, the late Mr T Bailey, and Messrs Reckitt and Sons, Ltd, have each subscribed £10,000 Eventually 500 beds will be provided with all the necessary ancillary accommodation. Meanwhile a new operating theatre on the existing site is nearly completed and extensions of the out-patients' department and the nursing accommodation are in prospect

ROYAL SANITARY INSTITUTE—A Sessional Meeting will be held on Friday and Saturday, May 20th and 21st, in the Guildhall, Bath Dr Charles Porter will preside On Friday, at 7 30 P M., a discussion on Cremation will be opened by Dr H T Herring (hon secretary, Cremation Society of England), other speakers will include Dr Preston King, Mr J S Carpenter, and Mr G A Noble On Saturday, at 10 30 A M, Mr F P Sissons will read a paper on Sewage Disposal, and there will be a visit to the Bath City Sewage Disposal Works experience of the Home Office for many years had been and still was that licence holders as a body were willing and anxious to comply with the letter and spirit of the Act and to assist the Home Office in its administration While the Home Office agreed that it would be better to have more inspectors he could not hold out any hope in view of the need for economy that they would be willing to approach the Treasury for more money He thought that the inspections were carried out as well as they possibly could be in the circumstances He saw a letter in a newspaper not long ago from a distinguished scientific man, Prof Julian Huxley He referred to a reply made in the House of Commons by the Home Secretary from which it appeared that in the last 18 months the laboratories of University College were visited by an inspector 30 times without notice University College was specially singled out because he believed that there were more experiments carried out there than at any one place in the world That seemed to indicate a considerable amount of efficiency notwithstanding that the inspectors were somewhat short-handed Of course they had a great deal more to do than merely to inspect They had to be highly qualified persons who were able to give advice when applied to by schools which wished to carry out some very special piece of scientific work, and it would undoubtedly be a great benefit to the country not only in this direction but in many others if they could afford the money for increasing their number

Viscount **HALDANE** said he was chairman of the Vivisection Committee for some time and had the superintendence of the work that was done in the Home Office in connexion with the reports of the inspectors He was sorry to hear economy put up as a plea for not appointing more inspectors, even Lord Banbury would not invoke that sacred word But he comforted himself by this, that he did not think that an increase in the number of inspectors would make very much difference Lord Banbury was mistaken in supposing that the inspectors actually supervised the conditions under which the experiments were carried out That was not necessary Under the Act of 1876 a person could not perform an experiment unless he had a licence and that licence was not issued unless the inspectors were satisfied The great bulk of the work was paper work on the nature of the research to be made, and whether it involved pain The inspectors paid occasional visits in order to see that the conditions of the law were being observed He bore out from such experience as he had gained that there was very little violation of the Vivisection Acts in this country If there was any it was always heard of by responsible people and they stopped it The professors and persons concerned were very anxious not to have any scandal in connexion with the law So far from thinking that the Vivisection Acts did not go far enough he was not sure that they did not go too far It was only a few days since he saw a very distinguished young physiologist who had come to London to see him He asked him what brought him there, and he replied "There is an experiment which has to be made and should be made on a dog It is not at all serious, but it cannot possibly be made under an anæsthetic It involves taking out some of the spinal substance and some of the arterial blood and the observations must be taken without an anæsthetic There is only one way for it, and I have come up to be vivisected," and he was vivisected For several days he was in one of the hospitals, remaining in bed during part of the process He (Lord Haldane) mentioned that as showing that some of the experiments which were stopped by the Act were experiments which human beings with a desire for knowledge were ready to undergo He did not think that it was desirable that that should be extended A certain amount of experiment on animals was absolutely essential with the kind of diseases which existed to-day, requiring wholly new knowledge How such researches as those of Dr Banting on insulin could have been carried out without vivisection he did not know He was sure that some of the provisions of the Vivisection Acts went so far that although processes were quite painless they were hampered by the condition that anæsthetics must be strictly used and that the animal must not be allowed to live He said these things for the purpose on the whole of supporting the view taken on behalf of the Government He thought it would be a good thing to have another inspector of eminence but his work would be very largely paper work

Viscount **KNUTSFORD** said that everybody wanted to protect animals from cruelty, and if an addition to the number of inspectors would satisfy those who shared the sentiments of Lord Banbury, or would save them from the repetition of his speech every year, it might be worth the £2000 or £3000 a year which the Home Office said it would cost Lord Banbury had told the House about the vast number of experiments—as many as 209,000, but the removal of a flea from one dog to another was an experiment under the Act The 209,000 experiments did not all need an inspector One could not make any experiment on an animal except at a licensed place Lord Banbury said there were 242 licensed places He (Lord Knutsford) thought that the correct figure for England and Scotland was 267

Lord **BANBURY** said he was speaking of England and Wales

Viscount **KNUTSFORD** said that a great many of the places were in one building There were 68 of the 267 in London alone That being so a very large number of the licensed places could be visited in a few minutes He desired that the laboratories should be properly inspected, but two whole-time men could in the opinion of a great many people do the work perfectly well Two instances had been given of the way in which the law was broken One lady immersed some trout in polluted water she did not know that she had to get a licence for that The other irregularity was that a licensee holding a certificate " A " made simple inoculations into cats without authority Of course she had no business to do that, but those were the irregularities last year He thought that to appoint two more men at £3000 a year it would be a waste of money and he was glad that the Government did not intend to do it

Lord **DANESFORT** said he was not an antivivisectionist He realised that for purposes of research there were cases in which it was necessary to inflict pain upon animals but he felt very strongly that pain should never be inflicted except for purposes of research and under restrictions which while they did not unduly embarrass scientific work would avoid unnecessary pain to animals He would be very sorry to see the powers given by the Act of 1876 to vivisectionists extended Those who framed and passed the Act of 1876 intended the system of inspection to be a reality Notwithstanding the recommendation of the Royal Commission in 1912 that there should be four whole-time inspectors there were now only two Lord Knutsford thought that two were sufficient, but in his (Lord Danesfort's) opinion the weight of evidence was against Lord Knutsford's view

Lord **BANBURY** said Lord Desborough had admitted that breaches of the licence did occur, but he said they were not wilful, being due to ignorance The result, however, to the animal operated on was the same in either case That was one of the reasons why he thought there should be more inspectors and he trusted that the question of economy would not prevent the Home Office from adopting that course

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HOUSE OF COMMONS.

WEDNESDAY, MAY 4TH

Herrings Treated with Dye

Mr **JOHNSTON** asked the President of the Board of Trade whether his attention had been drawn to recent instances where herrings treated with dye had been sold as kippers, whether he was aware that in one instance boxes of kippers coloured with dyestuffs were supplied to a Colchester retailer at *2s 4d* per box, and retailed by him at *12s 10d* per box, and what steps he could take to safeguard the public in this regard —Mr **GUINNESS** (Minister of Agriculture) replied I am aware that it is the practice of some curers to use dyes for improving the appearance of herrings sold as kippers, but there is no power to prevent this practice unless the colouring material used is injurious to health. With regard to the last part of the question the whole subject of the price of fish is now being investigated by the Food Council

Sulphur dioxide as Meat Preservative

Mr **HERBERT WILLIAMS** asked the Minister of Health whether his attention had been drawn to the decision of the Board of Health in Scotland to allow the use of sulphur dioxide as a preservative for minced butcher meat during the months of June, July, August, and September in any year, and whether, having regard to the higher average temperature in England and Wales, he would consider introducing the same regulations —Sir **KINGSLEY WOOD** (Parliamentary Secretary to the Ministry of Health) replied My right hon friend is aware of the decision of the Scottish Board of Health, but as at present advised does not propose to modify the regulations as issued in regard to meat

Prisoner Suffering from Encephalitis Lethargica

Mr **ERNEST BROWN** asked the Home Secretary whether his attention had been called to a case at the Central Criminal Court in which a victim of sleepy sickness was sent to prison with hard labour, although the judge thought the mother was right in saying that the prisoner required treatment not as a criminal but as an afflicted person, and whether he would consider this case with a view to the remission of the sentence —Sir **WILLIAM JOYNSON-HICKS** replied Yes, Sir, my attention has been called to this case. The prisoner in question is reported to have suffered from encephalitis lethargica in 1919, but he is not at present considered to be certifiable under either the Lunacy or the

THE EARLY TREATMENT OF CHILDISH AILMENTS.

To the Editor of THE LANCET.

SIR,—It may be of interest to your readers to learn that at the Royal Cambrian Institution for the Deaf and Dumb, with its 80 resident pupils, the average drug bill for the last seven years has not exceeded £10. Included in this amount are items for dressings, cod-liver oil, and syrup of hypophosphates, and although the amount is low the health-rate has been excellent.

I have been the honorary physician to this institution for 22 years, and consistent with the sound health of the pupils it is to my advantage to have as few calls as possible. Fortunately for me the matron realises that it is much easier to keep the children well than to cure them when ill; as a consequence she phones me at once as soon as any sign or symptom suggesting a departure from normal health makes its appearance. Taken at such an early stage most of the illnesses resolve themselves into something starting from the stomach, and in nearly every case a few doses of calcium permanganate or Condy's fluid brings about a termination of the embryonic gastritis. It is astonishing the readiness with which cases of feverishness rising to 103°–104° F. respond to the permanganate, in my opinion much more satisfactorily than they do to drugs of the salicylic group, especially as the latter nearly always leave some reactionary after-effect. In cases of inflamed pharynx the matron immediately swabs the throat with petrol, which has the effect of clearing away all evidence of spots or patches within three days. Externally petrol is applied to all cuts and scrapes, so as to wash away grease and the dirt bound up with it; on evaporation the wound is left clean and dry, and ready for a dry dressing. The early application of first-aid treatment of this sort is responsible for the infrequent appearance of impetigo.

Nearly all the children, whose ages vary from 6–16 years, come to the institution from local education authorities, with the result that most of the treatment is required at the beginning of a term, being devoted to counteracting the evil results of the holidays. One cannot help feeling that the school medical officers with their large staff of nurses might do more for these children whilst they are in their school districts during the holidays. The ignorance which exists as to the proper methods of educating children of this sort is immense, and visits by nurses and even by school medical officers would enlighten not the parents but the medical staff too.

I am, Sir, yours faithfully,

Swansea, May 4th, 1927. G. ARBOUR STEPHENS.

DALRYMPLE HOUSE: TREATMENT OF INEBRIETY.—We have received the combined report of the Homes for Inebriates Association and of Dalrymple House, Rickmansworth, which is managed by a committee of this body and which has now completed its forty-third year of successful treatment of drink and drug addicts. The profits are expended on improvements in the home, and no member of the Association benefits financially from the enterprise. At the end of last year 21 patients were in residence, 7 private and 14 under the Inebriates' Act, as against 12 and 9 respectively at the beginning of the year. Seventy were admitted and 69 discharged during the year under review. Of these only three were drug addicts, all medical practitioners. The superintendent, Dr. F. S. D. Hogg, lays stress on the evil results of drinking methylated spirit, and refers to recent work describing the legal precautions that have been found necessary in the United States. One of his patients was almost blind on admission from this cause, and another was mentally enfeebled—he fears permanently. Dr. Hogg does not give details of the treatment used, but appends a very complete analysis of a group of 1615 patients consecutively discharged. Of these 1119 left after the efflux of time, 31 because further treatment was unnecessary, the remainder from illness, private affairs, or unsuitability for treatment; 18 suffered from heart disease and 17 from kidney trouble. This appendix will interest all those concerned with the treatment of inebriety.

Parliamentary Intelligence.

HOUSE OF LORDS.

WEDNESDAY, MAY 4TH.

EXPERIMENTS ON ANIMALS.

Lord BANBURY asked the Government the number of inspectors appointed under the Cruelty to Animals Act, 1876. He said he did not wish to make any accusation or charge against the inspectors under this Act. He did not know who they were and he had no reason to doubt that they were doing their duty in a proper and efficient manner, if it was within their power to do so. Since he put this question down the Home Secretary, in answer to a question in the House of Commons, had said that there were two whole-time inspectors, and that the last occasion on which they had interfered in order to prevent an animal from suffering prolonged and agonising pain was on March 25th, 1926. He would like to ask the noble lord, who would answer for the Government, how he could justify the statement made by professors and doctors that there never was any cruelty at all, and that the inspectors might be trusted to carry out the Act, because there were humane people who in no circumstances whatever did anything contrary to the Act whether an inspector was present or not? How many places were licensed for the purposes of these operations? He gathered from the answer to another question in the House of Commons on April 11th of this year that 212 places had been licensed. There were only two inspectors to inspect those 212 places. In 1925, which was the last date on which returns from the Home Office had been given, there were 209,014 experiments. Of these 9402 were done with anæsthetics, and the balance of 199,612 were done without anæsthetics, and were, he presumed, injections or experiments of that nature, and therefore not calculated perhaps to cause any pain. He would point out, however, that these injections might be very likely after a time to cause intense suffering if disease was inflicted as a result of the injections. In regard to the experiments with animals under anæsthetics each inspector would have to inspect 4701 experiments in a year in 212 different places. In University College alone, according to an answer given in the House of Commons on Dec. 13th last, in the case of dogs only there were 114 experiments in two years. There were 574 animals experimented on in one year and only one class of animal was used, and yet the number of inspectors was only two. During the whole of his (Lord Banbury's) political career he had been an apostle of economy and he did not wish in any way to cause additional expenditure, but in a case of this sort, where the additional expenditure would probably not be more than £3000 or £4000 a year, he thought that it was necessary as long as these experiments were allowed that the Act of 1876, which specially insisted upon inspectors being appointed, should be carried out in a proper manner. No one could say that with the large number of experiments which were carried out, and with 212 places licensed, two men, however excellent they were, could possibly carry out their duties in a proper manner. The fact that last year one of these inspectors had to interfere because an experiment was not being carried out in a proper way showed that it was absolutely necessary that there should be an increase in their number.

Lord DESBOROUGH, replying for the Home Office, said that down to 1913 there were two part-time inspectors for Great Britain—Sir George Thane and Sir James Russell—who combined the work of inspection with that of other scientific posts which they held. In 1912 a Royal Commission was appointed and that Commission suggested that there should be four whole-time inspectors. In 1913 two whole-time inspectors were added to the existing two part-time inspectors. On Sir James Russell's death the number was reduced to three. Sir George Thane was nominally a part-time inspector, but during the last two years of service he gave practically the whole of his time to the work. When Sir George Thane retired in May, 1922, the staff was reduced to two whole-time inspectors, solely on the ground of the necessity for economy in public expenditure, which still continued. From the point of view of efficiency of administration a larger staff was desirable, and the Home Office agreed with his noble friend on that point. From the point of view of efficiency three whole-time inspectors would not be too many, and four would be still better. But he did not think that the point of view of Lord Banbury, who suspected violation or evasion of the law, need be seriously taken into account. Licence holders did sometimes commit serious breaches of the Act, or the conditions of their licences, but it was almost invariably due merely to negligence or to failure to understand a somewhat intricate and technical piece of legislation. Wilful evasion of the Act was practically unknown. On the contrary, the

TUESDAY MAY 10TH

The Health of the Army

Sir BASIL PETO asked the Secretary of State for War whether he was aware that the reports on the health of the army for 1923 and 1924 were only published in 1926, and whether he could take steps to see that the reports for 1925 and 1926 were published at an early date, and that, in future, these reports should be published within a reasonable time of the period to which they related —Sir L WORTHINGTON EVANS replied During the past two years special steps have been taken to bring the issue of these reports up to date and the reports for 1922 1923, 1924 and 1925 have all been published since the beginning of 1925, that for 1925 having been issued two months ago My hon friend will appreciate that the collection and collation of information and statistics from all parts of the world makes it impossible for publications of this kind to appear close on the period to which they relate

House Construction since the War

Mr TAYLOR asked the Minister of Health the total number of houses, whether subsidised or not, built each year in England and Wales since the war —Mr CHAMBERLAIN replied The following is a statement showing the number of houses completed during each year ended in March, since 1919 —

Year	With State assistance	Without State assistance	Total
1920	715	53,800 (*a*)	251,988
1921	28,549		
1922	101,071		
1923	67,853		
1924	18,664	67,546	86,210
1925	67,669	69 220	136,889
1926	106,987	66,439	173,426
1927 ..	153,779	64,200 (*b*)	217,979
Total	545,287	321,205	866,492

(*a*) Separate figures are not available for the years 1920–23, and the number is based partly on an estimate

(*b*) This figure includes an estimate of 33,000 for the half-year ended March 31st, 1927 Final figures for this half year are not yet available

Uses of Machine-skimmed Milk

Brigadier-General CLIFTON BROWN asked the Minister of Health (1) what are the principal articles of food for which imported machine-skimmed milk was used, and (2) whether the 88,000 tons of machine-skimmed condensed milk imported last year into this country was all used for human consumption, or whether some of it was used for other trade purposes, and, if so, for what purposes —Mr CHAMBERLAIN replied So far as I am aware, all the machine-skimmed condensed milk referred to was imported for human consumption, including various manufacturing and household uses I regret that I have no information which would enable me to state in detail the principal articles of food in which it is used

Meal Relief for Night Telephonists

Viscount SANDON asked the Postmaster-General whether night telephonists got an uninterrupted meal relief, and if accommodation was provided for rest, and, if not, whether he would take steps to provide these —Sir W MITCHELL-THOMSON replied In a large number of cases night telephonists have a scheduled meal relief on all-night attendances In other cases a meal relief could not be scheduled without bringing a relief officer on duty for a short period at an unreasonable hour but the calls during certain hours of the night are so infrequent that in practice the men can take meals without difficulty It is not considered necessary to provide special accommodation for rest, as night telephonists are paid for wakeful attention, and their weekly attendance is only 45 hours

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MARRIED WOMEN MEDICAL OFFICERS—Durham County Council has decided to give three months' notice terminating the appointments of married women officers on its medical staff whose husbands are in receipt of adequate incomes

REBUILDING BRADFORD ROYAL INFIRMARY—It is hoped that the foundation-stone of the new infirmary will be laid in October The total cost of the building is expected to be £500,000, and the first instalment is to be a self-contained ward block which will cost £75,000 The site is in Duckworth-lane, on the outskirts of the city, and the late Mrs Harry Smith, who formerly lived on the site, has bequeathed a sum of about £15,000 to the institution An individual donor has promised £30,000, and a group of friends has made itself responsible for the building of a wing

Medical News.

UNIVERSITY OF OXFORD—At a Congregation held on May 5th the degree of Doctor of Medicine was conferred on H St H Vertue and C F T East

UNIVERSITY OF CAMBRIDGE—At a Congregation held on May 7th the following degrees were conferred —

M B and B Chir—D Riley
M B—H L Wilson

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND—At the Final Examination held from April 4th to 29th the following candidates were approved in the undermentioned subjects, but are not eligible for diplomas —

Medicine—S I Abrahams, Guy's, Mary E A. Allen, Birmingham, N H Allen, Guy's, B J E Anson, King's Coll J F Bell, Liverpool, W Blayney, St Thomas's; Rosalind V Carruthers, Oxford and King's Coll, J T Chesterman, Bristol, L H Crosskey, Birmingham, Alva A Daniell and Ethel G Davies, Royal Free, S B Davis, London, J S Dinsdale, Leeds, O C Dobson, Durham, G C Dorling, London W E Dornan, Leeds, J C E Dusseau, Toronto A Erian Cairo and St Bart's, G S Ferraby King's Coll J Fitzsimons, Otago and Middlesex, Helen G Gifford, Birmingham, R V. Goodliffe St Bart.'s, C D Gun Munro, King's Coll, Eunice M Hatch St Mary's, R E Havard, Guy's Laurel K Heny, Royal Free, B R Irani, London, Alison R. Kerridge and Margaret Leathes, Royal Free, P H Loretz, Guy's, Ma Y May, Royal Free, Marjorie H Mills, Birmingham C S Morgan, St Thomas's, M N Patel, London, M G Pearson Westminster, E U H Pentreath, St Bart's, Mary E Percy, Birmingham, Monica M M Power, St Mary's; H L Rees King's Coll, J H Richmond, Guy's W V Roache, St Bart's V H Sarland, Birmingham, D P H Schafer and N T H Schafer, London, N L Shepperd, King's Coll, F Smith, Birmingham, Eileen R B Snow, St Mary's, P A M. Soutter, Westminster, Ruth M W Turner, Cambridge and St Mary's, K S A Venkatachala Ayyar Madras and Guy's, Nora W Wamsley, Charing Cross, D Wardrop Birmingham A G Watkins, Univ Coll Margaret A Willcox and F C Wilson, King's Coll, W M Wilson, St Bart's, and Dorothy L Woodroff, King's Coll

Surgery—Joan Anderson, Manchester, J H Attwood, St Bart's, I Bakhsh, Guy's P V Bamford, London, A C H Bell, St Bart's, F W Besley and L Blackstone, London, H E Blake, St Thomas's, O Bode, London, Ruth N Brittan, Royal Free, W H Brown, St Mary's, C E S Bullen, Leeds, E L Butler, Birmingham, J K Cameron, Liverpool, J T Chesterman, Bristol, J P Collinson, Sheffield, R W Cooper, Middlesex S Craddock, St Mary's, T S Daniels Guy's, A F J D'Arcy, St Mary's, E L Davies, Univ Coll, W A Davies, Liverpool, S B Davis, London S Deaner St Mary's, J S Dinsdale, Leeds, C B Drew, St. Thomas's, E D Dunnill, Guy's, T Edmunds St Thomas's, Muriel F M Evans, Charing Cross M. Farid, Cairo and Birmingham, R B Floyd, Manchester, H W. Frickel, St Mary's, H L Fuller, Bristol, C. E Gallagher, Guy's Helena M Gambrell, Royal Free, G G Gillam, Univ Coll, J C Gordon, St Bart's, M K Gyi, Guy's, G A S Harris St Bart's, Phyllis N Hooper, Cardiff, A L Hyatt and R. Inwald, Middlesex, E D Irvine, Liverpool, L A Jacob, St Thomas's E T James, St Bart's, H E James, Univ Coll, J L G Jenkins, St Bart's, P D Johnson, St Thomas's, O T Jones, St Bart's, R T Jones, Guy's, Lily A Jörgensen, Royal Free, C S Kah, St Thomas's, E R Keeble and W R Keizer, London M Koettlitz St Thomas's, A Konig, Middlesex, A H Lafone, St Mary's, T E Lamech, St Thomas's, L E Lane, Guy's, D A Langhorne, St Bart's, J A Lee Newcastle-on-Tyne F G Leslie, London, A W Lilley, Manchester Edith G Lummex, King's Coll F E Lipscomb, Middlesex, F E Lomas, Liverpool, A Long, Leeds J McHugh Liverpool M. A Mahmood Punjab and Middlesex, Muriel M. Manley, St Mary's, A M A Moore London, E G Muir, Middlesex, Lois J Ogle, Royal Free V E Palmer, St Thomas's, Ethel E A Pepper, Royal Free, G M Phadke Univ Coll R F Phillips St Bart's, O Plowright Guy's, J C Preston Manchester, R. C Probyn-Williams, Oxford and London, W J E Fadford, Guy's P R Rainey, St Bart's, J R. Rickett, Guy's, L G R Roberts, Liverpool, I M Robertson, St Bart's, D A. Rolfe, Birmingham, E ap I Rosser St Bart's, R W Sabonadiere, St Thomas's, P. G Salt St Bart.'s, E J Silverman, Middlesex, T. E N Simpson Liverpool, A Sirry, Birmingham Hilda W Slack, Royal Free, Joan Staddon, King's Coll, T R Stevens St Thomas's S Le R Switzer, London V J. M Taylor, Liverpool H S Thomas, Melbourne and Middlesex; L G Thomas, Liverpool R G Thomas, St Thomas's, E C Till Guy's J R Unger, Middlesex J A Vernon, Guy's, M R Wadia Bombay, G A B Walters St Thomas's, E N Wardle Liverpool, J R. S Webb, St Thomas's, P H Whitaker, Liverpool P C Wickremesinghe, Ceylon and Guy's, S T Williamson, Guy's, W A Wood, St Bart's; and R L Wynne, Liverpool

Mental Deficiency Acts, he is, however, being kept under special mental observation in the prison hospital. All the relevant facts were before the learned judge when he decided to send the young man to prison, and after careful consideration I have come to the conclusion that I would not be justified in advising any remission of sentence

THURSDAY, MAY 5TH

London Police and First-aid

Mr DAY asked the Home Secretary how many small field-dressing outfits had been supplied to the mounted police in the Metropolitan police area for the purpose of first-aid, whether first-aid was also rendered where necessary to horses in the streets of London, what was the cost of these outfits, and on how many occasions they had been used to the last convenient date —Sir WILLIAM JOYNSON-HICKS replied No field-dressing outfits have yet been supplied but 300 dressings have been ordered It is proposed that mounted police shall render first aid where necessary to horses in the streets if the driver consents The cost is £12

Departmental Committee on Solicitation Laws

Dr SHIELS asked the Home Secretary if the proposed departmental committee on the solicitation laws would include Scotland in its sphere of inquiry, would Scotland be given representation on the committee, and, if that was not considered practicable, would a separate Scottish committee be appointed Sir PATRICK FORD asked a similar question —Sir WILLIAM JOYNSON-HICKS replied It is intended that the proposed inquiry should extend to Scotland and that a person residing in Scotland should be appointed to the Committee

Price of Parlour Houses

Mr HERBERT WILLIAMS asked the Minister of Health how the contract price for parlour houses now compares with the price before the announcement of the reduction of the subsidy —Mr CHAMBERLAIN replied The average price of parlour type houses included in contracts let by local authorities during the three months ended in March last was £490, as compared with an average price of £513 for the previous December quarter

Massage and Electrical Treatment for Insured Persons

Mr BOWERMAN asked the Minister of Health whether in view of the recommendation of the Royal Commission on National Health Insurance that massage and electrical treatment be added to the list of additional benefits, he would consider the desirability of promoting a scheme whereby such treatment might be obtainable without difficulty for insured persons if and when the treatment had been prescribed for them.—Mr CHAMBERLAIN replied In the event of massage and electrical treatment being added to the list of additional benefits, I should be prepared to give all possible assistance to approved societies, with the object of securing for their members the opportunity of obtaining the necessary treatment under satisfactory conditions and on reasonable terms I should, however point out that before any regulation could be made adding the treatment in question to the list of additional benefits, I should have to be satisfied that a reasonable number of societies desired to amend their existing schemes of additional benefits and to divert to massage and electrical treatment some of the money at present allocated to other treatment benefits

Medical Officer's Dispute with Local Authority

Mr JOHNSTON asked the Secretary of State for Scotland whether he was aware of the prolonged correspondence between the parish council of Strath, Skye, and the Scottish Board of Health relative to a dispute over the continuance of the present medical officer for the parish in his appointment and that the council had intimated its unanimous intention of resigning unless it was given freedom of action in terminating the present appointment and in securing possession of the house tenanted by the present medical officer for the parish and what steps if any, he proposed to take in the matter —Sir JOHN GILMOUR replied I am aware of the present circumstances of the medical service in the parish of Strath and have myself been in correspondence with the parish council in the matter By Section 3 (5) of the Highlands and Islands (Medical Service) Grant Act, 1913, the parish medical officer cannot be dismissed from his post without the consent of the Scottish Board of Health In pursuance of their duty under that section the Board ordered an inquiry into the medical service in this parish and appointed a senior member of the Scottish Bar as Special Commissioner for that purpose The Commissioner found that certain professional charges brought against the parish medical officer had not been substantiated and ought never to have been made, and also that there was no other ground on which his dismissal from the parish appointment would be justified After consideration of the Commissioner's report the Board decided that this was a case which clearly called for the protection afforded to parish medical officers in the Highlands and Islands by the section referred to, and I entirely concur in that decision

Small-pox at Hendon and Golders Green

Mr DAY asked the Minister of Health the total number of small-pox cases that had been reported from Hendon and Golders Green to date in the recent outbreak, the number of deaths resulting, and what, if any, special precautions had been taken to prevent any further cases occurring —Mr CHAMBERLAIN replied Eight cases have occurred in the Hendon Urban District which includes Golders Green, and four deaths have resulted As soon as the nature of the disease was determined all the usual preventive measures were adopted by the local authority, and a medical officer of my department has rendered assistance

MONDAY, MAY 9TH

School Medical Service

Dr VERNON DAVIES asked the President of the Board of Education the number of school-children examined at schools by the medical officers of the Lancashire education authority for each of the last seven years for which statistics were available, the number of medical officers employed in this work and the salaries and emoluments paid to these officers, and the average cost of medical services for each examination made —Lord EUSTACE PERCY replied The following is the information asked for —

Financial year	Medical officer staffs *	Estimate of total salaries in respect of School Medical Service	No of inspections (routines, specials, and reinspections)
		£	
1921–22	$15^{1}/_{5}$	15,765	74,246
1922–23	$15^{1}/_{5}$	16,528	79,823
1923–24	$12^{4}/_{5}$	13,315	80,927
1924–25	$12^{4}/_{5}$	12,239	71,538
1925–26	$13^{3}/_{5}$	13,167	67,465
1926–27	$13^{3}/_{5}$	13,087	†95,106

* Estimated equivalent of whole time officers engaged in School Medical Service work The work of these officers is not confined solely to medical inspection, but includes many other duties connected with the School Medical Service

† Includes special examinations of children in connexion with school feeding during the coal dispute

Comparable figures for the year 1920–21 are not available It is not possible to state the average cost of medical services for each examination made, as the school doctor's work includes many other duties connected with the School Medical Service besides medical inspection

Deaths from Small-pox

Lieut -Colonel HOWARD-BURY asked the Minister of Health how many deaths had been due to small-pox during the present year in this country —Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied Twenty-seven deaths among persons suffering from small pox have so far been reported in England and Wales during the present year, but in some cases the death certificates have not yet been received

Colonel HOWARD-BURY asked if the Ministry of Health were taking any steps, in view of the danger of an epidemic, to recommend vaccination

Sir K WOOD replied that they were doing all they could in that direction

Commander WILLIAMS asked if the Department were drawing the attention of the school authorities to the very great need of encouraging vaccination

Sir K WOOD said that the Department were doing all they could in that direction

Housing Schemes in Scottish Rural Areas

Mr SKELTON asked the Secretary of State for Scotland the number of local authorities in Scotland responsible for submitting schemes under the Housing (Rural Workers) Act, 1926, how many had submitted schemes, and how many such schemes had been approved by the Scottish Board of Health —Sir J GILMOUR replied Though the provisions of the Housing (Rural Workers) Act, 1926, apply particularly to rural areas any local authority may submit a scheme under the Act if they consider that within their area there are persons of the classes specified in the Act for whom approved accommodation should be provided Thirty-two local authorities in Scotland have submitted schemes and 28 of these schemes have been approved by the Scottish Board of Health

THE new Science School attached to Clifton College will be opened on Thursday, June 2nd, by the Prince of Wales

Sir David James Galloway M D Edin has been reappointed an unofficial member of the Executive Council of the Straits Settlements

KENT COUNTY MENTAL HOSPITAL —On Tuesday, June 7th, at 2 30 P M., Princess Mary Viscountess Lascelles will open the nurses' home at this hospital at Maidstone

WEST KENT MEDICO-CHIRURGICAL SOCIETY —At a meeting to be held at the Miller General Hospital Greenwich, to-day (Friday), May 13th at 8 45 P M, Dr H- Nockolds will give a presidential address on the Poor-law Hospital and its Relation to General Practice

THE MEDICAL PRAYER UNION —The annual medical missionary breakfast of the Medical Prayer Union will be held on Wednesday, May 18th, at the Refectory, University College, Gower-street, W C 1, at 8 A M, under the presidency of Dame Mary Scharlieb An address will be given by Dr Katherine Harbord of Jaunpur India. An intimation of intention to be present will be welcomed by the hon secretary, Dr Tom Jays, Livingstone College, Leyton, E 10

BEDS FOR RHEUMATIC CHILDREN IN LONDON Under the arrangement made between the Metropolitan Asylums Board and the London County Council, beds are now available at Queen Mary's Hospital, Carshalton, and Highwood Hospital, Brentwood for the accommodation of children under 16 years of age who are suffering from acute rheumatic fever, subacute rheumatism, the later stages of acute rheumatism, rheumatic chorea and rheumatic carditis including recurrent attacks Medical practitioners who desire to recommend child patients for admission should communicate with the School Medical Officer, County Hall, London, S E 1 giving particulars of the cases The accommodation is reserved for children resident in the County of London

RUTHERFORD MORISON TESTIMONIAL FUND —This fund shows a final available balance of £1206, after the payment for the portrait of Prof Morison and sundry incidental expenses have been met This sum has been handed over to the council of the University of Durham College of Medicine, as trustees, to administer the Rutherford Morison Travelling Scholarship, which was the purpose selected by Prof Rutherford Morison for the balance of the fund Prof Morison desired that the scholarship should be available for candidates proposing to take the degree of Doctor of Surgery (D Ch.) in the University of Durham, and particularly to enable such candidate to undertake six months' surgical study abroad Each scholarship is to consist of the accumulated annual income of the trust fund for three years, the first award to be in 1929

The nominating board for the scholarship is to consist of the Professors of Surgery, Anatomy, Physiology, Pathology and Bacteriology for the time being in the University of Durham College of Medicine and one member of the Honorary Medical and Surgical Staff of the Royal Victoria Infirmary

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION —On Tuesday, May 17th, at 10 A.M., Dr B T Parsons-Smith will give a special demonstration at the National Hospital for Diseases of the Heart; on Thursday, May 19th, at 1 P M., Mr. Maurice Whiting will give a special demonstration at the Royal London Ophthalmic Hospital, and on Friday, May 20th, at 2 P M., Mr Maynard Smith will give a surgical demonstration at St Mary's Hospital These demonstrations are open to members of the medical profession without fee From May 16th to 28th a special course will be held at the Infants Hospital under the direction of Dr Eric Pritchard This course will be of particular interest to the infant welfare worker For the general practitioner the Hampstead General Hospital staff will undertake a course from 4 30 to 6 P.M. for two weeks from May 16th. A ten weeks' course in neurology began on May 9th at the National Hospital, Queen-square, it is divided into three parts, any of which may be taken. The Fellowship can arrange for practical courses in anæsthetics and obstetrics, and also make arrangements for clinical assistantships in gynæcology During June there will be special courses in Diseases of the Chest at the City of London Hospital for Diseases of the Heart and Lungs (Victoria Park), Diseases of Children at the Children's Clinic; Gynæcology at the Chelsea Hospital, and Ophthalmology at the Central London Ophthalmic Hospital. The Fellowship also provides a general course at the associated hospitals Copies of all syllabuses and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship at 1, Wimpole-street, London, W. 1

ON Monday next, at 8 P.M., Mr. Lionel G Pearson, F R I B A., will read a paper before the Royal Institute of *British Architects on the subject of Foreign Hospitals* The address of the Institute is 9, Conduit-street, London, W 1

MILK-SUPPLY AT WORKINGTON —According to Dr R W Macpherson, medical officer of health for the Borough of Workington, tests of milk retailed in the borough revealed that 75 per cent of the milk was dirty, the deposit in unsatisfactory samples consisting mostly of cow dung, hairs, and dirt

STOBHILL HOSPITAL GLASGOW —The Glasgow Parish Council continue to develop this institution on the lines of a fully equipped modern hospital At an estimated cost of about £40,000 a medico-electrical department is in course of being provided This department, when completed, will supply the latest developments for the treatment of diseases by means of electricity

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH —A quarterly meeting of the College was held on May 3rd, Dr G M Robertson, the President, in the chair Dr John Robert Lord and Dr William Bell were introduced and took their seats as Fellows of the College and Dr Walter Duncanson Chambers was elected to the Fellowship

The following were elected members of the College Arthur Mills, Harold Edward Whittingham Ram Swarup Gupta, James Davidson, James Alexander Law Loudon William Lindsay Kinnear, and Raymond Leopold Albert Kitchen

Dr R A Fleming was nominated a representative on the Conjoint Committee of Management of the Triple Qualification The Parkin Prize was awarded to Dr J D Comrie The Freeland Barbour Fellowship was awarded to Dr T R R Todd

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole street, W

TUESDAY, May 17th —5 30 P.M GENERAL MEETING OF FELLOWS Ballot for election to the Fellowship

WEDNESDAY —5 P.M, HISTORY OF MEDICINE Annual General Meeting Election of Officers and Council *Papers* Mr J Leveen *Shabbethai Donnolo* Dr R W Innes Smith An Unpublished Letter of John Fothergill

THURSDAY —5 P.M DERMATOLOGY (Cases at 4 P.M) Annual General Meeting Election of Officers and Council Cases Dr H W Barber *Prurigo Nodularis* Other cases will be shown *Paper*. Dr Louis Savatard (Manchester) Ichthyoses and Cancer of the Skin with Special Reference to Mule Spinners' Cancer

FRIDAY —8 P M, OBSTETRICS AND GYNÆCOLOGY Annual General Meeting Election of Officers and Council *Specimens* Mr L G Phillips *Spontaneous Separation of the Cervix during Labour* Mr Everard Williams (1) Uterine Sarcoma, (2) Repeated Tubal Pregnancy *Paper* Mr A S Parkes The Internal Secretions of the Ovary Prof Beckwith Whitehouse will speak 7 P M, ELECTRO-THERAPEUTICS Annual General Meeting Election of Officers and Council

ROYAL SOCIETY *OF* TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W

THURSDAY, May 19th —8 15 P M, *Demonstrations* at 7.15 P.M Debate on the Organisation of Medical Research in the Tropics Opened by Dr A T Stanton, Chief Medical Adviser to the Secretary of State for the Colonies followed by Prof Warrington Yorke, of Liverpool

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole street, W

MONDAY, May 16th to SATURDAY, May 21st.—FELLOWSHIP OF MEDICINE Tues, 10 A M, Dr B T Parsons-Smith Demonstration at the National Hospital for Diseases of the Heart Thurs., 1 P.M, Mr M. Whiting Demonstration at the Royal London Ophthalmic Hospital Fri, 2 P M, Mr Maynard Smith · Demonstration at St Mary s Hospital These demonstrations are free to members of the medical profession —ALL SAINTS' HOSPITAL, Vauxhall Bridge-road, S W Afternoons and evenings, demonstrations, including cystoscopies and lectures —LONDON SCHOOL OF TROPICAL MEDICINE Endsleigh-gardens N W Tues, Dr Manson-Bahr Thurs. 2 P.M, Dr Low Lecture-demonstrations —ROYAL FREE HOSPITAL, Gray's Inn-road, W C Wed, 5 P.M., demonstration by Prof McIlroy 5 15 P.M, lecture demonstration by Dr.

Midwifery—G J Ahern, London, Florence M Allen, King's Coll Mary E A Allen, Birmingham, F W Allinson, S W Allinson, Univ Coll., A F Alsop, St Bart's, R Anderson, Cambridge and Birmingham, S W K Arundell, Middlesex, I Bakhsh, Guy's, Gertrude C Banks, Royal Free, D S M Barlow, Univ Coll, Katherine Barnett, Charing Cross, H L W Beach, St Bart 's, W V Beach, Guy's A C H Bell, St Bart 's, O Bode, London, S G Budd, Cardiff, E L Butler, Birmingham, J K Cameron, Liverpool, Eleanor M Charless, Royal Free, Rosalind V Carruthers, King's Coll, C S Carter, St Mary's, B Cimbelmann, Middlesex, Amy G Clogg, King's Coll, R E P Cohen, Birmingham, N B Colman, St Bart 's, J F Crabtree Manchester, W S Creer, Liverpool L H Crosskey, Birmingham, Mona C Davies, Charing Cross, S Deaner, St Mary's, J De Rosa, London, P M Deville, Guy's, P Dickman, Charing Cross, A Dodd, Liverpool, D E Dunnill, Guy's, Evelyn Durrance, Royal Free W J Eastwood, Liverpool; T Edmunds, St Thomas's, M M El Toubi, Sheffield, Alexandra G H English, Royal Free, A Erian, Cairo and St Bart 's, I B Ewart, Edinburgh, J A Fernandez, Univ Co, G S Ferraby, King's Coll, F Forty, Univ Coll, Agnes B Francklyn, St Mary's, J L Franklin, Cambridge and St George's, H L Fuller, Bristol, Helena M Gambrell, Royal Free, S L Gargye, Manchester, A M Ghaith, Birmingham, Christina Gibson, King's Coll, Helen G Gifford, Birmingham, S Gifford, St Thomas's, G G Gillam, Univ Coll S Goldman, London, R V Goodliffe, St Bart 's, P S Goonewardene, Ceylon, Tatiana Gourlande, St Mary's, E L Graff and C S Gross, Guy's, C D Gun-Munro, King's Coll, P E T Hancock, Cambridge and St Bart 's, I G Hardinge, Charing Cross, A S Hatch, Univ Coll Emily C Hill, Liverpool, H Hillaby, St Bart 's, J L Holt, Manchester, G M Housden, E H Hudson and W F Hudson, Guy's, E D Irvine, Liverpool, S D Isaacs, Birmingham, Agnes H Jackson, King's Coll L O Jaggassar, St Mary's H E James, Univ Coll, I J Jones, St Thomas's, E R Keeble, London, A K M Khan, St Thomas's, K Knowles, St Bart 's, M Koettlitz and T E Lamech, St Thomas's, Nellie I Lanckenau Univ Coll, L J Lawrie, London, J A Lee, Durham, F E Lipscomb, Middlesex, F E Lomas, Liverpool, R A McCance, King's Coll, W S McConnell, Guy's, Jane S McDowell Charing Cross, J McHugh Liverpool, M S Mahmood Middlesex, Marjorie V Martin Birmingham, E W Martindell, Univ Coll, Margaret I Meacock, Westminster, Hermia M Mills, Royal Free, Marjorie H Mills, Birmingham, R V Mone, and T Morton, St Thomas's, E G Muir, Middlesex, J B Murray, St George's, W H Myburgh, Guy's, Lois J Ogle, Royal Free, R Oliver, Univ Coll, J R Peacock, St George's, T Pearce, Liverpool, M V P Peiris St Thomas's, P I Peltz, St Bart 's, Ethel E A Pepper, Royal Free, Mary E Percy, Birmingham, G M Phadke Univ Coll, R F Phillips, St Bart 's, O Plowright, Guy's, C D Politeyan Cambridge and St Thomas's, J W Pugh, Univ Coll, W J E Radford, Guy's, E A P S Rawlings, Charing Cross S H Reeves, Birmingham, J R Rickett, Guy's, E ap I Rosser and A de la C Russian, St Bart 's, R W Sabonadiere, St Thomas's, P G Salt, St Bart 's, J E Saville, St Thomas's, Margaret P Shackle, King's Coll, C W Shaw, St George's, N L Shepperd, King's Coll, L Shillito, St Thomas's, Clarice A Skidmore, St Mary's, Hilda W Slack, Royal Free, P A M Soutter, Westminster, R J Steeds, Univ Coll, T R Stevens, St Thomas's Ivy E Tanner, Royal Free, B A Taylor, Manchester, V J M Taylor, Liverpool, H S Thomas, Melbourne and Middlesex, L G Thomas, Liverpool, E C Till, Guy's, S L Tunnicliffe, Liverpool, H M Turnbull, Charing Cross H L Vaidya London, J A Vernon, Guy's, A D Versteegh, St Thomas's A J Walsh, Liverpool C J Waring, London, I Waynik, Charing Cross, P H Whitaker, Liverpool, A T D Whitfield Birmingham D B J Wijeyesekera Ceylon, Hannah E Wilby, Royal Free, R N Wilcox, St Thomas's, Gladys E Wilkinson Manchester, L N T Williams, Liverpool, F C Wilson King's Coll, J A Wood, Sheffield, M R Zada, Middlesex, and R A Zeitlin, Y S Zidel and H D R Zscherpel, St Bart 's

Pathology (New Regulations)—F B Mallinson, St George's

INSTITUTE OF HOSPITAL ALMONERS —At a meeting to be held at the Grotrian Hall, Wigmore-street, London, on Thursday, May 26th, at 5 P M, the subject of Hospital Social Service will be discussed by Dr A C E Gray, Sir John Rose Bradford, F R S, Sir Berkeley Moynihan, and Sir Arthur Stanley

UNIVERSITY OF LONDON —The first report of Mr T Franklin Sibly, D Sc as principal officer of the University, has just been issued During the year 1926-27 the total number of candidates for all examinations was 33,220 as against 32,353 last year, the total number of successful candidates was 13,224 compared with 13,275 last year Various benefactions and changes in the organisation of teaching are recorded those referring to the medical schools have already been noted in our columns

University College—An address on Lord Lister and the Romance of Surgery will be given by Mr Raymond Johnson in the Botanical Theatre of University College, on Monday, May 23rd, at 5 30 P M Dr A M H Gray will preside

ST. MARY'S HOSPITAL MEDICAL SCHOOL.—Mrs Christabel Burton has given £4000 to this medical school to found a scholarship in memory of her mother, Mrs Geraldine Harmsworth, who died in August, 1925

ROYAL SOCIETY OF ARTS —On Wednesday, May 18th, at 8 P M, an address on Industrial Welfare in Great Britain and the United States will be delivered by Mr Robert R Hyde, Director of the Industrial Welfare Society

Dr W J O'Donovan has been appointed physician in charge of the skin department of the London Hospital on the retirement of Dr J H Sequeira, who has been appointed consulting physician

Dr. Chisholm Williams, of Finchley, has been made an allowance of £120 a year by the trustees of the Carnegie Hero Fund As a result of radiological work which continued from 1895 until last year Dr Williams has lost his right hand and two fingers of his left hand

MEDICAL OFFICERS OF SCHOOLS ASSOCIATION —A meeting of this Association will be held at 11, Chandos street Cavendish-square, London, W 1, on Friday, May 20th, at 5 P M (tea 4 30 P M), when a discussion on Swimming Baths will be opened by Dr J Graham Forbes, Dr F W Alexander, and Mr F E Wilkinson

GRANT TO QUEEN CHARLOTTE'S HOSPITAL —The committee of this hospital, which, as we announced last week, is appealing for £250,000, has been informed that in recognition of the national importance and urgency of the task which it is undertaking, the Ministry of Health has sanctioned a *special grant of £15,000 for* the hospital's maternity and child welfare work

ABERDEEN UNIVERSITY CLUB, LONDON —The next bi-annual dinner will be held at the Piccadilly Hotel on May 26th at 7 30 P M Lord Cecil of Chelwood will take the chair and the guest of honour will be Mr John Buchan M P Any graduates of the University, men or women who wish to attend the dinner or join the club are asked to communicate with Dr Anstruther Milligan at 11, Upper Brook-street, W 1

RONTGEN SOCIETY —The annual general meeting will be held on Tuesday, May 17th, at 8 15 P M, in the British Institute of Radiology, 32, Welbeck-street, London, W, when Dr R G Canti will describe an investigation into the effects of beta and gamma radiation on normal and malignant tissue cells growing in vitro, by means of the cinematograph with demonstrations, and Prof J A Crowther will give an analysis of some observations on the action of X rays on drosophila eggs

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE —The 97th annual meeting is to be held at Leeds from August 31st to Sept 7th under the presidency of Sir Arthur Keith F R S, the subject of whose address will be Darwin's Theory of Man's Descent as it Stands *To day Particulars of the programme* may be had from the Secretary of the Association at Burlington House, London, W 1

INSTITUTE OF PSYCHO-ANALYSIS — On Friday evenings at 8 30 P M Dr Ernest Jones is giving a series of lectures at the London *Clinic of Psycho-Analysis*, 36, Gloucester place, W 1, on the Relation Between Psycho-Analysis and General Medicine It is proposed to devote from half to three-quarters of an hour to discussion and questions at the close of each lecture The fee for the course will be 30s to medical practitioners, or 15s to medical students, and tickets may be got from the Hon Sec, Dr John Rickman at the Clinic

LEBANON HOSPITAL FOR MENTAL DISEASES —The twenty-eighth annual meeting of this hospital will be held at Friends House, Euston-road (opposite Euston Station), London, on Thursday, May 19th, at 3 15 P M (tea at 1 30) Dr E W G Masterman will preside and Dr H Watson Smith, director of the hospital, will personally present his report on the year's working Amongst the other speakers will be Major J W Mackinnon, R A M C Dr Francis Edwards, and Lieut -Colonel H G L Wortabet I M S All who are interested are invited to attend The general secretary of the hospital is Miss Hilda Fox, and the London Office is at 130, Marylebone road, W 1

SOCIETY OF MEDICAL OFFICERS OF HEALTH A meeting of the Maternity and Child Welfare Group of this society will be held at the Shoreditch Model Welfare Centre 210 Kingsland-road on Wednesday afternoon May 18th, when cases will be shown by the medical officers of the Shoreditch Maternity and Child Welfare Department The meeting will begin with tea at 4 30 P M, after which cases will be shown At 5 15 P M Dr Glen Davison will read a paper entitled the Newcastle-upon-Tyne Caloric Percentage Method of Dieting the Premature and the Sick Infant

Heald—Central London Throat, Nose and Ear Hospital, Gray's Inn-road, W C Intensive course London Lock Hospital, Dean street, W Clinical course of instruction throughout the month—Maudsley Hospital, Denmark Hill, S E Special course continuing throughout the month in Psychological Medicine—Infants Hospital, Vincent square, S W Afternoon course Special lectures and demonstrations Hampstead General Hospital Haverstock Hill, N W Special course for General Practitioners 4 30 to 6 p m Medicine, surgery, and the specialties Further information from the Secretary

NORTH-EAST LONDON POST GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N

Monday, May 16th—2 p m, Medical Cases in the Wards 2 30 p m to 5 p m, Medical, Surgical, and Gynæcological Clinics Operations

Tuesday—2 30 p m to 5 p m, Medical, Surgical, Throat, Nose, and Ear Clinics Operations

Wednesday—2 30 p m to 5 p m, Medical, Skin, and Eye Clinics Operations

Thursday—11 30 a m Dental Clinic 2 30 p m to 5 p m, Medical Surgical, and Ear, Nose and Throat Clinics Operations

Friday—10 30 a m, Throat, Nose, and Ear Clinics 2 30 p m to 5 p m, Surgical, Medical, and Children's Diseases Clinics Operations 4 30 p m, Special Demonstration on Selected Cases of Nerve Diseases by Dr L R Yealland

KING'S COLLEGE, Strand, W C

Tuesday, May 17th—5 p m, Prof R J S McDowall Autonomic Nervous System (Third of four free lectures)

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, Hunter street, W C

Monday, May 23rd—5 30 p m, Prof H Beckwith Whitehouse The Menstrual Function (Second of three free lectures)

ROYAL NORTHERN HOSPITAL, Holloway-road, N

Tuesday, May 17th—3 15 p m, Dr W R Reynell Demonstration of Medical Cases

INSTITUTE OF PATHOLOGY AND RESEARCH, St Mary's Hospital, W

Thursday, May 19th—5 p m, Lt-Col S P James, (I M S retd) Some Methods and Problems of Malaria Research

LONDON SCHOOL OF DERMATOLOGY, St John's Hospital, 49, Leicester-square, W C

Tuesday, May 17th—5 p m, Dr H MacCormac Treatment of Syphilis (1)

Thursday, 5 p m, Dr K N G Bailey Pathology Demonstration

LONDON HOSPITAL MEDICAL COLLEGE, Mile End, E

Thursday, May 19th—4 15 p m, Prof Knud Faber Gastritis Its Relation to Achylia and Ulcer (Schorstein Lecture)

UNIVERSITY COLLEGE, Gower street, W C

Tuesday, May 17th—5 30 p m, Mr W H McLean (late Sudan Government Services) National, Regional and Town Development Planning

MIDDLESEX HOSPITAL MEDICAL SCHOOL, Berners-street, W

Monday, May 16th—5 p m, Mr John Fraser Some Surgical Problems

Tuesday—5 p m (Second lecture)

Wednesday—5 p m (Last lecture)

GUY'S HOSPITAL MEDICAL SCHOOL, London Bridge, S E

Friday, May 20th—5 30 p m, Prof E H Kettle Inflammation and Infection (First of four free lectures)

MANCHESTER ROYAL INFIRMARY POST GRADUATE COURSE

Tuesday, May 17th—4 15 p m, Dr D Dougal New Methods in the Investigation of Sterility

Friday—4 15 p m, Mr A H Burgess Demonstration of Surgical Cases

UNIVERSITY OF SHEFFIELD POST GRADUATE CLINICS

Tuesday, May 17th—3 30 p m (at the Jessop Hospital) Mr King Bleeding at the Menopause and After

Friday—3 30 p m (at the Royal Infirmary) Mr Cuff Clinical Cases

Appointments.

Durbridge, H, L R C P Lond, M R C S, has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Matlock District of the County of Derby.

Vacancies.

For further information refer to the advertisement columns

Birmingham University—Asst Lecturer in Physiological Dept £300

Bolton Infirmary and Dispensary—Two H S's £150 Also Asst H S £100

Bolton Union, Townleys Hospital, Farnworth—Second Asst M O £225

Bristol, Southmead Hospital—Consultant for Ear, Nose and Throat Dis £100

Cancer Hospital, Fulham-road S W—H S At rate of £100

Evelina Hospital for Children, Southwark, S E—H P At rate of £120

Gt Yarmouth General Hospital—H S £150

Hampstead, General and North-West London Hospital, Haverstock Hill, N W—Phys to Out patients

Hospital for Sick Children, Great Ormond street, W C—R M O for Branch Hospital, Tadworth Court, Walton Heath Surrey At rate of £250

Keighley and District, Victoria Hospital—Res M O At rate of £180

Lambeth, Metropolitan Borough of—M O H £1400

Leeds, Jewish Herzl Moser Hospital—Res M O £50

Liverpool and District Hospital for Diseases of the Heart—Hon Asst Phys

London Jewish Hospital, Stepney Green, E—Res M O Also Jun Res M O At rate of £150 and £100 respectively

Manchester, Northern Hospital for Women and Children, Cheetham Hill-road—Sen and Jun H S's £130 and £100 respectively

Manchester Royal Infirmary—Dickinson Surgery Scholarship £75 Also Hon Asst Aural Surg

Middlesex Hospital, Ferens Institute of Otolaryngology—Bernhard Baron Research Studentship £300

Miller General Hospital for South-East London Greenwich road, S E—Anæsthetist 52 guineas

Newark Hospital—Res H S £200

Newcastle upon Tyne, Royal Victoria Infirmary—Hon Asst

Nordrach on Dee Sanatorium, Banchory—Asst Res M O £300

Queen's Hospital for Children, Hackney road, E—Cas O At rate of £100

Royal College of Surgeons of England—Professors and Lecturers

Royal Free Hospital, Gray's Inn-road, W C—H Surg, H P Cas O, &c Each £100 Also Asst Surg to Ear Nose and Throat Dept

Royal Naval Dental Service—Dental Officers

St Bartholomew's Hospital—Asst Dental Surg

St John's Hospital, Lewisham, S E—Phys to Skin Dept

St Mary Abbots Hospital, Kensington—Res Med Secr £100 Also Asst M O £250

Salisbury General Infirmary—Pathologist and Bacteriologist £500 Also Hon Asst Surg

Truro, Royal Cornwall Infirmary—H S £170

University College Hospital Gower street, W C—Surg for Genito Urinary Dis

Ware Park Sanatorium, near Ware, Herts—Asst M O £350

West Ham County Borough, Plaistow Fever Hospital—Second Asst M O £300

West London Hospital, Hammersmith road, W—Aural and Ophthalmic H S and Asst Res Cas O At rate of £100

West Riding Mental Hospital, Menston, near Leeds—Jun Grade Asst M O £400

Wigan Infirmary—Third H S At rate of £150

The Chief Inspector of Factories announces a vacant appointment for a certifying Factory Surgeon at Sheerness, Kent

Births, Marriages, and Deaths.

BIRTHS.

Langwill—On May 5th, at Marloes road, Kensington, W the wife of Archibald Langwill, M D, F R C S E, of a daughter

Tothill—On May 2nd at Caa an righ, Leigh on Sea, the wife of Dr Henry Tothill, of a son

Walton—On May 3rd, the wife of John Walker Walton, F G S, L D S Eng, Tower House, 16, Manor road, Folkestone, of a son

MARRIAGES

Babington—Watts—On May 7th, 1927, at St Paul's Church Cliftonville Margate by the Rev Herbert Pegg, Vicar, Major J W H Babington, M D, I M S (retd) to Gladys Mary Joan Watts, M B, B S, daughter of the late Lieutenant Colonel J L Watts, R E, 25, Cornwall gardens Cliftonville

Dix—Vernon—On Thursday, May 5th, at the Church of St Mary the Virgin, East Barnet, by the Rev F A Overton, Victor W Dix F R C S, to Nan, youngest daughter of Mr and Mrs W A Vernon, of Bohun Lodge, East Barnet

DEATHS

Brown—On May 8th, at "Holmlands," Mornington road Leytonstone, Henry Havelock Brown, M B, C M, aged 69

de la Cour—On May 8th at St Leonards on Sea, after a short illness George Francis de la Cour, M D Edin, M R C S, L R C P, in his 84th year

N B—A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

Harveian Lecture

ON

DIVERTICULA OF THE ALIMENTARY CANAL

Delivered before the Harveian Society on March 10th

By SIR BERKELEY MOYNIHAN, BART
K.C.M.G., C.B., LL.D.,
PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

A DIVERTICULUM is a wayside shelter by a main path. In the alimentary canal it is caused by a protrusion of the mucous membrane, with or without the other coats, from the lumen of the bowel In the embryo the extrusion of the wall of the intestine is an integral step in the formation of several of the organs whose processes are associated with, and essential to the work carried on in the digestive tract The liver and the pancreas arise as buds from the intestinal wall But not all the little pouches which spring from the mucosa have this full development We may discover the following different destinies

DESTINIES OF THE EMBRYONIC DIVERTICULUM

1. The diverticulum may develop in fœtal life and proceed on its normal career and lead to the growth of—

(*a*) The appendix whose connexion, throughout its whole length is fully maintained, there being no differentiation into a duct.

(*b*) The liver and pancreas whose connexion is maintained with the alimentary canal through their ducts

(*c*) The thyroid gland, whose connexion as a rule is completely broken in early fœtal life. The lumen of the protusion, from which this gland develops, does not go deep into the solid bud which consists of cells forming the thyreoglossal tract. The foramen cæcum on the dorsum of the tongue presents the upper and only patent part of this diverticulum; the pyramid of the thyroid gland is the remnant of the lower part of the tract. From the intervening portion of the tract, if obliteration is not complete, "dermoid" cysts may arise, they lie sometimes in the base of the tongue, sometimes below the hyoid bone whose development disintegrates the tract

2 The diverticulum may develop normally in fœtal life, but its connexion with the mucosa in the adult may remain only in curtailed condition, or may finally disappear

(*a*) The pouch of Rathke, seen in early infancy, vanishes as a rule completely in the course of a few years

(*b*) The diverticulum of Meckel found towards the lower end of the ileum is the unclosed portion of the omphalo-mesenteric duct.

3 The diverticulum may develop, and in normal circumstances disappear in fœtal life In a few instances this normal atrophy and disappearance may not take place, and a diverticulum is found in the adult Lewis and Thyng,[34] and also Keibel and Mall,[31] have shown that diverticula from the stomach, duodenum, and jejunum are frequently found in fœtal life and at their tip little solid masses of cells are seen, identical with the cells from which the pancreas grows These cells normally wither and are absorbed It would seem as though a whole series of efforts were made to develop the pancreas only those connected with the ducts of Wirsung and Santorini surviving The *others are there* in case of mischance. In a few such cases the normal disappearance does *not* occur and gastric, duodenal or jejunal buds, with an accessory pancreas attached to each may persist into adult life

FORMS OF DIVERTICULUM.

Various forms of diverticulum occur and may be classified in this way —

(*a*) A diverticulum which arises as a bud from the wall of the alimentary canal during development will contain all the coats of the bowel at that point It is said to be "congenital" in origin and "true" in structure.

(*b*) A diverticulum which occurs after development is complete, and is due to some abnormal process, will be found to contain, as a rule only the mucous coat, with or without an adventitious fibrous layer; in no case does it display all the coats of the alimentary canal It is "acquired" in origin and "false" in structure

(*c*) An acquired diverticulum may be caused either by the pushing out of the mucosa from the lumen owing to increased intestinal pressure, or by the dragging out of the wall by the adhesion of some firm structure to the outer side of the bowel. In the former case it is a "pulsion diverticulum," in the latter a "traction diverticulum" (Rokitansky[50]) A diverticulum, caused by the traction of an adherent structure to the outer side of the alimentary canal, as, for example, in the œsophagus, may enlarge because of the pressure of *increasing quantities of retained substances* within its cavity Beginning as a "traction diverticulum," its enlargement is due to conditions similar to those which create and enlarge a "pulsion diverticulum" A third form of diverticulum, the "traction-pulsion" diverticulum, may therefore be described

The following are the morbid changes which may occur in diverticula —

1 Inflammation in and around the sac; diverticulitis and peridiverticulitis
2. Suppuration
3 Sloughing and gangrene.
4 Perforation { to the surface
to a serous cavity, pleural or peritoneal,
to another viscus
5 Adhesions which lead to the compression and withering of the sac obsolescence, or, in the case of Meckel's diverticulum, adhesions leading in one or other way to intestinal obstruction.
6 Development of carcinoma
7. Rotation of the sac when it has grown to such a size as to develop a "neck" or pedicle, this rotation together with the pressure of the distended sac, causing obstruction.

Diverticula of the Pharynx

There are three forms of pharyngeal diverticula There is a high lateral form, which contains air and an accumulation of mucus; it is due to a lack of fusion between the branchial clefts, and the opening, as a rule very small, lies close to the tonsil Defects in the closure of branchial gaps are by no means infrequent; I have had many cases in which fistulæ and cysts in the neck have existed since birth; sometimes they communicate with the pharynx and then removal presents a nice occasion for the exhibition of care and *patience Cases are recorded by* Birtwistle and Frazer[6] Excess in activity in closure of the clefts is indicated by the development of little red pimples near the ear and on the neck When the failure to close a cleft affects the mucous rather than the cutaneous side a "blind internal fistula" develops which, under pressure forms at last a large cavity in which mucus is retained . it may be inflated by air. Food does not often enter, for in the act of deglutition the small orifice is closed. The first case was recorded by M Watson[62] of Manchester. The aerocele was found in the *dissecting-room It extended* from the tendon of the digastric muscle to the interclavicular notch The position of the opening into the pharynx just behind the tonsil. between the lower jaw above and the stylo-hyoid ligament below, pointed to some failure in the closure of the first postmandibular visceral cleft Kostanecki[34] has dealt fully with the subject of anomalies in connexion with the branchial clefts. Wheeler[64] recorded a very remarkable case in which a large aerocele was traced to its origin in the right sinus pyriformis After removing it a pharyngeal diverticulum of the kind presently to be described was found. and that too was removed Godlee and Bucknall[18] recorded a case of inflatable diverticulum extending from above the angle of the jaw to the clavicle The narrow pedicle passed through the thyrohyoid membrane. *They review* nearly 200 cases of pharyngeal pouches and fistulæ The exact nature of their own case has been questioned by Irwin Moore.[42]

A *second form of diverticulum* (often spoken of erroneously as "œsophageal") *springs* from the back of the pharynx, in the middle line, as a rule, but sometimes *at the* side, extends almost invariably to the left side (only in rare examples to the right

NATIONAL BABY WEEK COUNCIL

THE annual report for 1926 records a busy year in the Council's various departments. The demand for films was nearly three times as great as in the previous year; competitions for teachers and school children attracted 1500 entries, as compared with 600 in 1925, and the requests for help in organising local campaigns was larger than at any time since the war. An important sign of the Council's influence is seen in the fact that its regulations for the conduct of baby shows and competitions, which insist on the judges being medical practitioners, are being more and more widely adopted. The fourth English speaking conference, held at the Caxton Hall in July, was the principal feature of the London celebration of Baby Week and served to focus attention on special topics selected for discussion. During the week, through the courtesy of the Royal Society of Medicine a display of propaganda films was given in the Barnes Hall. The subjects chosen by the Council this year for particular emphasis are —

(1) Atmospheric Pollution in Relation to Maternity and Child Welfare.

(2) Development of Dental Clinics and Dental Care for Mothers and for Children under Five.

(3) The Home in Relation to Maternity and Child Welfare.

A silver challenge shield for the best Baby Week campaign, to be competed for by any part of the Empire except the British Isles has been presented by the *News of the World*. The Astor shield was won in 1926 by Northampton, and the William Hardy shield for areas with a population not exceeding 10,000, by Halesowen. The *Daily News*, which last year gave prizes for the greatest percentage reduction in neonatal mortality in districts with a population of not less than 50,000, is this year offering similar awards for the most efficient infant welfare centres, the judging to be carried out by the Baby Week Council. The Council itself is again holding competitions for teachers and school-children, particulars of which will be announced during Baby Week, to be celebrated, as usual, in the first week of July.

ELECTRARGOL IN PANDEMIC INFLUENZA

WRITING in a recent issue (March 13th, 1927) of the *Concours Medical*, Dr. Gidon points out that the key to the polymorphism of the secondary reactions of the influenza patient is found in the diminution or suppression of the specific defensive secretions so that the specific immunity of the organism may be temporarily annihilated by the toxin. Hence he urges the value of non-specific anti-infective medication, such as the intravenous administration of collargol or electrargol; with the latter he has obtained very satisfactory and constant results. He maintains that these are not wholly due to shock, but mainly to selective fixation of the product in the star-cells of Kuppfer in the liver, where two-thirds of the silver is retained. Extracts of liver six hours after electrargol injection have been shown by Duhamel to have quadrupled the organ's anti-streptococcic power, whether the drug is introduced intravenously or intramuscularly. The method appears to have a sounder pathological basis than many remedies advocated and is worthy of an extended trial if we are again visited by a serious epidemic of influenza.

DIETETIC PRINCIPLES

PREVIOUS pamphlets issued by the Health Service Bureau of the Wesleyan and General Assurance Society, Birmingham, have been favourably commented upon in these columns, and a recent set of four on the whys and hows of diet reach the same high standard of accuracy and simplicity. No. 1 is introductory and lays down certain general principles; by itself it may be a little bewildering, but it is presumed that the four pamphlets are issued together. Next follow two on what our foodstuffs consist of. Proteins, fats, carbohydrates, and roughage are dealt with in the first of these, and salts, water, and vitamins in the second. Rather too much space is spent on salts, and it is surely inaccurate to say that "rickets is due to a deficiency of calcium," particularly when oatmeal is mentioned in the next line as a source of this metal. There are certain forms of diet sometimes given to children in which the more oatmeal added the worse the rickets produced. The fourth pamphlet is entitled "a square meal," and the familiar diagram, first devised by Prof. Plimmer, is reproduced without acknowledgment, a page of explanation being added. The points here criticised are the only ones to which exception can be taken, and they are mentioned because the Health Service Bureau has a reputation for attention to detail which it is hoped it will maintain. Local authorities and others engaged in the task of educating the public in matters of health can be strongly advised to make use of these new pamphlets.

"THE COUNTRYMAN"

AN illustrated review makes its appearance this week, published by J. W. Robertson Scott from Idbury, Kingham, Oxford, and entitled "The Countryman" (2s. 6d.). It is a quarterly publication, forming a miscellany dealing with country life and progress, and it is proposed in its pages to provide practical information in connexion with every department of rural welfare. In the first issue we find contributions from (among others) Lord Ernle, the late Minister of Agriculture, and Sir Daniel Hall, Chief Scientific Adviser, Ministry of Agriculture and Fisheries, and in subsequent numbers we are encouraged by the editor to expect similar brief but authoritative essays aiming to inform the increasing number of citizens who are striving for better conditions of rural life. It is recognised by the large number of doctors who practise in the country that an intelligent view of country life would be of great value to the nation, and we wish the new magazine good fortune.

BEARDLESS SURGEONS

To the Editor of THE LANCET

SIR,—In reference to the story of the burnt whisker in THE LANCET, April 30th, p. 955, I would remark that it was not the nurse but the beardless surgeon who, after a sigh of concern said "Let us spray!" As stated under the "Beardless Vogue," I am still of opinion that the general order for the shorn face followed on the cult of Listerism; the technique of that system in 1881 was by no means perfect, however, as many operating surgeons—including Lister—wore whiskers, and others beards, and equally the ideals of ritual in aseptics later were difficult of attainment, as the following incident will show. Sole visitor to a provincial hospital in 1923, "well equipped in instruments, rubric, and fair linen," to see bone-plating by a London surgeon, I was bidden don overalls and rubber sandals, and stand on a floor flooded with antiseptics. After the play of a multipolar catherine wheel with a herculean task before him, and the patient "under," the clean-shaven, unmasked surgeon began by describing a circle with his extended arm and saying "Silence, touch me not!" Arduous and prolonged, the procedure became dramatic, when drilling and driving home the three tibial screws, *avec force majeure*, and perspiring freely, he himself broke the silence by calling for a 'kerchief and bidding me clear the dew-drops from his brow. It was summer time when in four and a half months the plate was removed and in due course aseptics triumphed over "those pernicious beings whose anchor is the meanest particle of the inconstant air."

I am, Sir, yours faithfully,

HERBERT A. SMITH

Ealing, W., *May 2nd, 1927.*

MIDWIFERY AMONG THE POOR OF LONDON

THE excellent results obtained, both in hospital and on the district, by the staff of the East End Mothers' Lying In Home, are by now well known, and the report for the last two years just issued, shows that they have in no way failed to maintain their own high standard. In a total of 4291 deliveries, all unselected cases, there was no instance of Cæsarean section or embryotomy; forceps were applied on 53 occasions only and 8 labours were induced. Of these all had normal puerperiums save one forceps case where there was a slight rise of temperature. Three babies died as a result of delivery—one an anencephalic and one a 28-weeks' child for which labour was induced because of bicornuate uterus and transverse presentation.

In the hospital there were 35 cases of maternal pyrexia, estimated on the B.M.A. standard. Of these 14 were due to general conditions and 8 to sapræmia. On the district there were but 13 morbid temperatures, only two of them being due to sapræmia. Even so these temperatures were down again in 48 hours except in one case of sapræmia and one of pleurisy. The rate of morbidity works out at 1.7 per cent. for the two years. The medical officer attributes the lower percentage on the district to the segregation of patients and the fact that primiparæ and bad cases would naturally be found in greater numbers in the hospital. So few were the cases of clinically contracted pelvis that no table is given to illustrate them. While improved midwifery no doubt partly accounts for this, it is also just about time that the reduction of deformities from rickets as a result of infant welfare work began to show itself among child-bearing women.

During the whole period under review there was only one case of eclampsia, in a primigravida who had suddenly developed albuminuria at the end of her time; she had a normal delivery. Two patients died in 1926 in hospital; one developed pelvic cellulitis after a difficult forceps delivery, whilst the other died after manual removal of the placenta. The babies do as well as the mothers; of the 1100 born in the hospital only 13 lost weight before discharge and 11 died. A maternal death-rate during ten years of 0.60 per 1000 in the slums of London constitutes a record that must be hard to beat.

observed. Pressure upon the neck, or a backward movement of the head brings food back into the pharynx, even after it has been swallowed A swelling is noticed on the left side, filling as the meal is taken, and sometimes growing so large as to resemble a thyroid tumour. Gas developing in the pouch escapes into the pharynx, and has produced in patients of my own a condition which I have not seen described, but which is perfectly characteristic, indeed pathognomonic. As the patient talks, the movements in the neck cause an expulsion of gas from the pouch, and the words spoken have "bubbles" in the middle of them, or among them; there is a curious, but quite unmistakable, spluttering of air in and among the spoken words This phenomenon may be produced in a very striking manner if the patient is asked to read continuously while a gentle pressure is exercised upon the neck. Dysphagia may sometimes be severe, and dyspnœa, cyanosis and coughing are caused by inhalation of particles of food suddenly expelled from the pouch into the pharynx Enlargement of the pouch may cause displacement of the œsophagus and may exercise such pressure upon it that food cannot be taken in quantities adequate to sustain life. Death may occur from starvation, or from inhalation pneumonia

Treatment—If the nature of the condition is explained to an intelligent patient he can often be made to control the condition quite satisfactorily. He must empty the pouch after each meal and wash it out with fluid drunk freely at the end of the meal, and preferably after the solid food has all been pressed back into the pharynx If the sac is already large it is best to remove it This was first accomplished by von Bergmann [5] in 1890 and in England by Butlin [9] Formidable difficulties and dangers chiefly derived from infection of the wound are said to attend this method. Before operation a day or two must be given to the toilet of the pouch to clean it After the sac has been cleared from its firm adhesions the whole wound is smeared with warm melted vaseline which is given time to "set," so as to seal off the connective tissue spaces The same method of closure of the stump of the excised pouch is used as is found so satisfactory in the case of the duodenum after gastrectomy. With these little precautions and careful methods no anxiety need be felt In all cases it must be made quite certain that any œsophageal obstruction, or any spasm of the crico-pharyngeus, is *overcome* The division of the operation into two stages, the pleating of the unopened sac, or its suspension from the highest part of the wound so as to invert it and make the entrance the lowest instead of the highest part, are not methods which I have felt either need or desire to practise Nor have I practised the method [30] in which the œsophagoscope is used to clean out the exposed sac and to facilitate its exposure and removal It is wise to feed the patient for many days after operation by a Jutte tube passed through the nose If the patient's strength is greatly depleted he may be fed in this manner for two or three weeks before operation and the other means of resuscitation with which we all are familiar be practised. *Gastrostomy* has been performed in several cases; the use of the Jutte tube makes this unnecessary

Diverticula of the Œsophagus

These pouches are found chiefly in two places—at or near the bifurcation of the trachea and at the lower end of œsophagus within one or two inches of the diaphragm When they occur in the former position they very rarely have any clinical importance; they may perhaps be a cause of mediastinitis as Rokitansky [40] supposed and they may at times cause slight intermittent dysphagia They are produced (*a*) by the traction of adherent bands springing from tuberculous and often calcified glands, and because of their position are known as "epibronchial" diverticula. These bands, "Ribberts [47] bands,' often very firm and strong are attached at the one end to the anterior wall of the gullet at the other to a gland which is often adherent to the trachea or the left bronchus Movements of deglutition and of respiration cause traction, hour by hour and day by day, until a little pouch is formed, which, perhaps by lodgment of food, but chiefly by continued traction, is steadily enlarged As Waggott [61] first showed the fundus of the pouch is in many cases, drawn to a higher level than the orifice, so that food is not able to lodge in the cavity (see also Riebold [44]) They may also be caused (*b*) by the protrusion of the œsophageal wall above "Lütgert's ledge" [39] This is a ledge found on endoscopic examination of the gullet; it lies near the tracheal division, and is often assumed to be due to the pressure of the left bronchus The ledge however, does not lie quite in the position of this bronchus nor is its direction the same, and the bronchus does not normally come into a relation with the œsophagus intimate enough to indent it. The ledge, however caused may have the effect of causing a temporary halt in the descent of large particles of food. A little bulging of the wall, so caused, may by degrees increase until a little pit and, finally, a fossa, is formed. If this explanation is sound the diverticulum is of the "pressure" variety In this situation the pouches rarely attract notice, they are sometimes seen on radiological examination but I have no experience of treating them

"Epiphrenic" diverticula, arising within a short distance of the diaphragm, and enlarging to a size which makes their recognition a simple matter for the radiologist, are attracting increasing attention I have seen three cases of this kind In one occurring in a woman the pouch was large, on the left side, shown clearly in the X ray photograph, and was associated with a high degree of cardiospasm. This has been noted in cases recorded by Hurst [28] and by Vinson [59] I found it necessary to do what is so rarely necessary, to dilate the cardia after gastrostomy My fingers passed easily into the diverticulum, which was as large as a lawn tennis ball My other two cases occurred in men and were unsuspected until X ray examination revealed the condition. In both cases the use of Hurst's tube relieved the symptoms of "dyspepsia" which had been attributed to a gastric ulcer. When the diverticula are large and causing symptoms an operation may be necessary Clairmont [14] has excised such a diverticulum and has kindly given me photographs of the case before and after operation. The result was excellent. In other cases operations have been practised for the anastomosis of the pouch with the fundus of the stomach, as first suggested by Lotheissen.[37] Gosset[20] described and illustrated a new operation of lateral œsophago-gastrostomy. The occasional presence of a stricture lower down in the œsophagus, possibly even of malignant disease, must be remembered.

Diverticula of the Stomach

They are very rare and are found in two places near the œsophageal opening and near the pylorus There is I think little doubt that two forms occur, the true and the false—the true being congenital, the false associated with penetrating gastric ulcer

The earliest recorded case is that of Weichselbaum.[63] The diverticulum was near the pylorus, and at its tip was a nodule the size of a hempseed, having the structure of the pancreas (see earlier reference to Lewis and Thyng)[36] There was also an accessory pancreas the size of a bean on the anterior duodenal wall Horrocks and Falconer [26] recorded the case of a man of 54, who died after a self-inflicted gunshot wound There was a marked constriction in the middle of the greater curvature said by Cunningham to be spasmodic A diverticulum arose from the pyloric canal on the greater curvature. There was also a pouch in the duodenum just beyond the pylorus. The floor of the gastric pouch was formed by an accessory pancreas Keith [32] has dealt with this subject also.

The diverticula arising in the proximal part of the stomach are always in close relation to the œsophageal opening. Keith points out that the stomach in the immediate neighbourhood of this opening is weak, side), and may form a large sac which, when distended, produces a prominent swelling in the neck, or extends even into the thorax

The first mention of this condition in surgical literature is found in the form of a letter from Mr Ludlow,[38] surgeon at Bristol, to Dr William Hunter The case was observed in the year 1764 and is described as one of "preternatural dilatation of, and bag formed in, the pharynx" The illustrations are excellent, and the accuracy of the description both of symptoms and of morbid anatomy is most remarkable The specimen is in the Hunterian Museum at Glasgow, and a drawing of it recently made for me shows how accurate were the original pictures In 1811 Monro,[41] of Edinburgh, described these pouches and discussed the method of their formation Sir Charles Bell [4] described a "preternatural bag formed by the membrane of the pharynx which impeded the introduction of a bougie," and gave a good illustration He was the first to suggest the origin of these protrusions in a spasmodic stricture of the muscle at the lower part of the pharynx, which caused fasciculation of the muscular layer above the obstruction, and hernial protrusion of the mucosa He commented upon the analogy with the sacculation of the bladder in urethral obstructions Matthew Baillie [2] relates a good example of this condition *Mondiere [40] is often quoted as recording an example of it.* Reference to his article, however. shows that it describes a case of perforation of the "lower part of the œsophagus" by a foreign body, a piece of granite, the size of a small apple, weighing 2 oz, which the patient "amused himself with, by rolling it in his mouth some moments before going to sleep" The condition is not very infrequent, but is no doubt often overlooked Zenker [65] says that it is "so rare that few physicians have ever seen a case" There are now few hospital surgeons without some experience of it

An interesting matter concerns the point of origin from the pharynx It was commonly asserted, as first by Zenker, that the origin is "at the boundary between the pharynx and the œsophagus" where the musculature was weak This area has since been described as the "Lannier-Hackermann" area by many writers, including the very last The search for "Lannier" results in the discovery that he is Laimer,[35] a former prosector in Graz, and "Hackermann" is Karl Haeckermann,[23] now of Bremen, whose thesis appeared in 1891 The "Laimer" area is triangular and lies below the *inferior constrictor*, on the posterior wall at the very origin of the œsophagus It is true that the wall of the gullet here is weak, but it is certainly not here that the pouch originates Waggett and Davis [60] have shown that this area, whose muscular wall is not so thick as in the rest of the œsophagus, does not yield when a stream of water is forced under pressure into the pharynx and œsophagus "When the dissected œsophagus was subjected to water pressure by attaching one end to the tap and securing the other there was a uniform dilatation of the œsophagus below and above the circular and sphincter portion of the inferior constrictor The circular fibres of the constrictor appeared as a waist belt, and no weakness could be demonstrated on the wall of the œsophagus immediately below the inferior constrictor"

When a specimen is examined in the post-mortem room, and the finger passed down from the pharynx into the œsophagus a very decided difficulty is experienced in overcoming the resistance of the sphincter guarding the entrance to the gullet This ring of muscle, of great strength, is formed by the crico-pharyngeus It is the obstruction offered by this sphincter which causes the pharyngeal wall to yield to pressure, and the protrusion of the mucosa begins immediately at its upper border, where a considerable deposit of fat between the muscular fibres is often seen The neck of the pouch therefore lies between the middle oblique fibres, and those lower circular fibres of the inferior constrictor which are now called the crico-pharyngeus A few oblique fibres may lie below the opening of the pouch

The origin of the third form—the lateral diverticulum—is, I think, quite different A lateral diverticulum is not a median diverticulum gone astray If the pharynx is dissected from behind a rather large pad of fat is found at the upper part of the œsophagus on each side immediately below the border of the crico-pharyngeus muscle If this pad is gently teased away a gap will be revealed between the lowermost fibres of the crico-pharyngeus and those fibres of the œsophagus which are descending from their origin at the back of the cricoid cartilage Advantage is taken of this hiatus to permit the passage of the recurrent laryngeal nerve with a branch of the inferior thyroid artery and vein, and a bundle of lymphatic vessels Here, indeed, is the weakest spot in the muscular armature of the pharynx or œsophagus, and, therefore, it is here that one would expect to find a pouch developing Though I have never had the opportunity of dissecting a specimen of lateral diverticulum there can be little doubt from the appearance shown in the drawings and descriptions of the only two whose records (Butlin [8] and Chevalier Jackson [30]) I can discover that this is their point of origin Butlin illustrates a case of lateral diverticulum, the specimen is now in the museum at St Thomas's Hospital Mr Urquhart, the curator, writes to me (March 8th, 1927):

"The opening of the pouch, I should say, had primarily been situated below the constrictor muscle, but as time passed the upper edge appears to have atrophied the lower fibres of the muscle to a small extent The opening into the pouch is some half-inch in diameter"

In some accounts, of which Bilton Pollard's [44] may be quoted as an exemplary instance, the pouch is said to spring from the œsophagus "below the inferior constrictor muscle", yet a careful reading makes it certain that the sphincter formed by the crico-pharyngeus was below the opening of the pouch

"On passing the forefinger into the œsophagus a resistance was encountered at its commencement There was no stricture in the ordinary sense and the mucous membrane appeared quite normal But nevertheless the commencement of the œsophagus was firm, not dilatable, and would only admit the first phalanx of the fore-finger Immediately above the resistant ring at the upper end of the œsophagus was the weak point in the middle line behind, at which the pouch had been developed"

There are therefore two forms of diverticulum in this region, a posterior median one passing through the interval between the oblique and the transverse *fibres of the inferior constrictor* (the fibres now described as the crico-pharyngeus muscle) as first shown by Killian [33]; and a lateral one passing through the weak spot, through which the recurrent laryngeal nerve enters They are both pressure pouches It is exceedingly probable that incoördination between the inferior constrictor fibres engaged in the propulsion of the bolus of food and the circular fibres which should relax to allow of the entrance of the bolus into the upper gullet, is responsible for the origin of the diverticulum but what causes this incoordination ? In a few cases a definite obstruction is found, due either to a spasm affecting the crico-pharyngeus, or to an organic stenosis lower down in the œsophagus Rarely this obstruction is malignant It is important *to remember the possibility of stricture* in the gullet when treatment is to be adopted

In one of Chevalier Jackson's [30] cases two diverticula were present Both were removed separately by operation one recurred and was again removed In the median form the lower lip of the opening (Killian's lip) is full, thick, and pouts into the pharynx in such manner that a bougie entering from the mouth is, like the food, easily deflected into the pouch The pouch as it enlarges extends to the left, and downwards even into the chest, into which perforation has occurred Robinson [49] records a case in which the pouch extended laterally and upwards "to the base of the skull" On distension it made the neck resemble that "of a pouter pigeon" The symptoms produced are characteristic Dysphagia is intermittent and progressive Regurgitation of unaltered food at once, or after many hours, or even days, is soon observed Pressure upon the neck, or a backward movement of the head brings food back into the pharynx, even after it has been swallowed A swelling is noticed on the left side, filling as the meal is taken, and sometimes growing so large as to resemble a thyroid tumour Gas developing in the pouch escapes into the pharynx, and has produced in patients of my own a condition, which I have not seen described, but which is perfectly characteristic, indeed pathognomonic As the patient talks, the movements in the neck cause an expulsion of gas from the pouch, and the words spoken have "bubbles" in the middle of them, or among them, there is a curious, but quite unmistakable, spluttering of air in and among the spoken words This phenomenon may be produced in a very striking manner if the patient is asked to read continuously while a gentle pressure is exercised upon the neck Dysphagia may sometimes be severe, and dyspnœa, cyanosis and coughing are caused by inhalation of particles of food suddenly expelled from the pouch into the pharynx Enlargement of the pouch may cause displacement of the œsophagus and may exercise such pressure upon it that food cannot be taken in quantities adequate to sustain life. Death may occur from starvation, or from inhalation pneumonia

Treatment—If the nature of the condition is explained to an intelligent patient he can often be made to control the condition quite satisfactorily He must empty the pouch after each meal, and wash it out with fluid drunk freely at the end of the meal, and preferably after the solid food has all been pressed back into the pharynx If the sac is already large it is best to remove it This was first accomplished by von Bergmann [5] in 1890, and in England by Butlin [9] Formidable difficulties and dangers, chiefly derived from infection of the wound, are said to attend this method Before operation a day or two must be given to the toilet of the pouch to clean it. After the sac has been cleared from its firm adhesions the whole wound is smeared with warm melted vaseline which is given time to "set," so as to seal off the connective tissue spaces The same method of closure of the stump of the excised pouch is used as is found so satisfactory in the case of the duodenum after gastrectomy With these little precautions and careful methods no anxiety need be felt In all cases it must be made quite certain that any œsophageal obstruction, or any spasm of the crico-pharyngeus, is overcome The division of the operation into two stages, the pleating of the unopened sac, or its suspension from the highest part of the wound so as to invert it and make the entrance the lowest instead of the highest part, are not methods which I have felt either need or desire to practise Nor have I practised the method [30] in which the œsophagoscope is used to clean out the exposed sac and to facilitate its exposure and removal It is wise to feed the patient for many days after operation by a Jutte tube passed through the nose If the patient's strength is greatly depleted he may be fed in this manner for two or three weeks before operation, and the other means of resuscitation with which we all are familiar be practised Gastrostomy has been performed in several cases, the use of the Jutte tube makes this unnecessary

Diverticula of the Œsophagus

These pouches are found chiefly in two places—at or near the bifurcation of the trachea, and at the lower end of œsophagus, within one or two inches of the diaphragm When they occur in the former position they very rarely have any clinical importance, they may perhaps be a cause of mediastinitis as Rokitansky [50] supposed, and they may at times cause slight intermittent dysphagia They are produced (*a*) by the traction of adherent bands springing from tuberculous and often calcified glands, and because of their position are known as "epibronchial" diverticula These bands, "Ribberts [47] bands," often very firm and strong, are attached at the one end to the anterior wall of the gullet, at the other to a gland which is often adherent to the trachea or the left bronchus Movements of deglutition and of respiration cause traction, hour by hour and day by day, until a little pouch is formed, which, perhaps by lodgment of food, but chiefly by continued traction, is steadily enlarged As Waggott [61] first showed, the fundus of the pouch is in many cases, drawn to a higher level than the orifice, so that food is not able to lodge in the cavity (see also Riebold [48]) They may also be caused (*b*) by the protrusion of the œsophageal wall above "Lutgert's ledge" [39] This is a ledge found on endoscopic examination of the gullet, it lies near the tracheal division, and is often assumed to be due to the pressure of the left bronchus The ledge, however, does not lie quite in the position of this bronchus, nor is its direction the same, and the bronchus does not normally come into a relation with the œsophagus intimate enough to indent it. The ledge, however caused, may have the effect of causing a temporary halt in the descent of large particles of food A little bulging of the wall, so caused, may by degrees increase until a little pit, and, finally, a fossa, is formed If this explanation is sound the diverticulum is of the "pressure" variety In this situation the pouches rarely attract notice, they are sometimes seen on radiological examination but I have no experience of treating them

"Epiphrenic" diverticula, arising within a short distance of the diaphragm, and enlarging to a size which makes their recognition a simple matter for the radiologist, are attracting increasing attention I have seen three cases of this kind In one occurring in a woman the pouch was large, on the left side, shown clearly in the X ray photograph, and was associated with a high degree of cardiospasm This has been noted in cases recorded by Hurst [28] and by Vinson [59] I found it necessary to do what is so rarely necessary, to dilate the cardia after gastrostomy My fingers passed easily into the diverticulum, which was as large as a lawn tennis ball My other two cases occurred in men and were unsuspected until X ray examination revealed the condition In both cases the use of Hurst's tube relieved the symptoms of "dyspepsia" which had been attributed to a gastric ulcer When the diverticula are large and causing symptoms an operation may be necessary Clairmont [14] has excised such a diverticulum and has kindly given me photographs of the case before and after operation The result was excellent In other cases operations have been practised for the anastomosis of the pouch with the fundus of the stomach, as first suggested by Lotheissen [37] Gosset [20] described and illustrated a new operation of lateral œsophago-gastrostomy The occasional presence of a stricture lower down in the œsophagus, possibly even of malignant disease, must be remembered

Diverticula of the Stomach

They are very rare and are found in two places, near the œsophageal opening and near the pylorus There is, I think, little doubt that two forms occur, the true and the false—the true being congenital, the false associated with penetrating gastric ulcer

The earliest recorded case is that of Weichselbaum [63] The diverticulum was near the pylorus, and at its tip was a nodule the size of a hempseed, having the structure of the pancreas (see earlier reference to Lewis and Thyng) [36] There was also an accessory pancreas the size of a bean on the anterior duodenal wall Horrocks and Falconer [35] recorded the case of a man of 54, who died after a self-inflicted gunshot wound There was a marked constriction in the middle of the greater curvature, said by Cunningham to be spasmodic A diverticulum arose from the pyloric canal on the greater curvature There was also a pouch in the duodenum just beyond the pylorus The floor of the gastric pouch was formed by an accessory pancreas Keith [32] has dealt with this subject also

The diverticula arising in the proximal part of the stomach are always in close relation to the œsophageal opening Keith points out that the stomach in the immediate neighbourhood of this opening is weak, and will yield readily under pressure The continuous vomiting of pregnancy as suggested by Hurst [29] may, in some cases, be responsible for the protrusion of the mucosa in consequence of the great and repeated sudden increase of pressure In the pig a large diverticulum is normally found near the cardiac orifice It is the analogue of the fundus of the stomach in man

Åkerlund [1] has recently drawn attention to the subject by the record of four cases diagnosed, radioscopically, during life All the patients were women, all had symptoms suggestive of gastric ulceration, in all the pouch was near the cardiac orifice, had a rounded, smooth surface, and retained an opaque meal for a few hours My friend, Dr Thomson, of Wakefield, has had a similar case, and has kindly given me the radiographs of it I have twice found during operations for duodenal ulcer a pouch on the greater curvature of the stomach about the size of a walnut, the exterior was smooth and free from adhesion, the finger readily entered the cavity, and in the floor of each an island of pancreatic tissue was present In one patient upon whom I performed gastrectomy for a tumour causing a pouch on the greater curvature of the stomach a smooth cavity was found, at the fundus of which was an adenomyoma [56] False diverticula associated with ulcer are, of course, very frequent and are well known They are the ' accessory pockets " formed when an ulcer penetrates deeply into the pancreas or into the liver, or into a mass of adhesions formed from the omenta

Possibly true diverticula are more common than we suppose Radiologically they must be difficult to distinguish from the false variety Hurst believes that—

> " The remarkable position, even outline, uniform rounded shape, free mobility, both with the stomach and to a slight extent independently of it, and the absence of tenderness make the diagnosis of a diverticulum of the stomach easy when the existence of such a condition is recognised, though in the absence of such recognition a diagnosis of ulcer would appear to be inevitable in spite of the very unusual features observed with the X rays "

Treatment —When a diverticulum lying near the cardia is large and causes symptoms it may be treated in the manner suggested by Hurst Large draughts of water fill the diverticulum, which may then be emptied by placing the patient in such a position that the orifice is the lowest part The pouch is washed out daily, or oftener If a pouch in the neighbourhood of the pylorus proves troublesome it may be treated by gastrectomy

Diverticula of the Duodenum

A case described in the year 1710 by Chomel [13] is often quoted as the first in which a duodenal diverticulum was observed The pouch contained 22 yellowish-white stones, and was probably an abscess in the head of the pancreas which had ruptured into the bowel In Alexander's translation of Morgagni's [43] letters there is a description of a case on which also doubts have been cast, which I do not share The first indisputable description was given in 1815 by Fleischman [17], in this country Habershon [22] was the earliest observer Very little clinical interest was taken in the condition until Case [10] first demonstrated a series of cases at a meeting of the American Medical Association in 1913, and in a later paper carried his discoveries further E I Spriggs [54] in this country, in a series of papers, also called attention to their significance As a result of radiological examinations we know now that the condition is not very uncommon, though more often overlooked than recognised Case,[11] in a consecutive series of 6847 examinations after a barium meal, found duodenal diverticula in 85 cases (1 2 per cent), and colonic diverticula in 138 cases (2 per cent) In 78 duodenal cases the pouch was solitary Even on the operation table, when we know from the X ray appearances that a pouch is present, it is not always a simple matter to recognise it at once I owe the knowledge I possess of this condition chiefly to Spriggs He has shown [55] that in 1000 consecutive examinations of the alimentary canal by X ray, 38 patients had 51 diverticula of the duodenum, situated as follows in the first part 1, in the second part 30, in the third part 16, in the terminal part 4; 20 patients were men, 18 women Case found in his series that the diverticulum was in the first part of the duodenum in 17 cases, in the second part in 49 cases, in the third and fourth parts in 19 cases He says that—

> " In about half the cases we may expect the diverticula to arise from the second portion of the duodenum, with the fundus of the sac lying within the substance of the pancreas or dorsal to it "

The condition may be congenital or acquired. The majority of the pouches are on the inner side of the second part of the duodenum, in the concavity which embraces the head of the pancreas The pouches often burrow into the gland, and they are generally free from any sign of inflammation At the fundus, as with the gastric diverticula, masses of pancreatic tissue may be discovered

Ulceration of the parts of the duodenum, from which the pouches commonly spring, is exceedingly rare The passage of the common duct obliquely through the duodenal wall is held to weaken it, and so to make easier the protrusion of the mucosa through this part The inspection of the pouches in the second part of the duodenum, during life and in the post-mortem specimens, makes me feel extremely doubtful as to their congenital origin, it is apparently certain that this condition is rare in youth and comparatively common in aged people Simmonds [52] has found diverticula in the first part of the duodenum in early childhood and concludes that these at least are congenital. I have seen only one case of this kind on the operation table, the walls of the pouch seemed to contain all the coats, the mouth was wide, there was no trace of inflammation, there was a fibrous mass at the fundus which I supposed was an aberrant pancreas The case was one of cholelithiasis, and the pouch had no connexion with the symptoms Huddy,[27] in an excellent discussion, decides in favour of the acquired origin of most examples The " pouching " of the first part of the duodenum associated with ulceration, and first described by Perry and Shaw,[44] is, of course, a very common condition, and has no affinity with the diverticula now considered There are probably both congenital and acquired diverticula, the congenital being associated with an accessory pancreas involving the first portion of the gut, the acquired involving the second part chiefly, and being perhaps induced by muscular deficiency near the ampulla The symptoms of duodenal diverticula are generally ascribed to a different cause I have operated upon several patients in whom this condition, previously diagnosed or quite unsuspected, has been found

Cholecystitis and duodenal ulcer are likely to be diagnosed when a diverticulum is the cause of the symptoms Now that we are becoming increasingly aware of the disease, and when almost every case is examined radiologically, mistakes will be less frequent The diagnosis cannot, I think, be made from the clinical history, but only on radiological examination It is by no means always necessary or even possible to treat the cases surgically A change of position will often allow a pouch to empty, paraffin will keep it lubricated and help to restrain putrefaction, and a large dose of bismuth carbonate taken once or twice weekly and allowed to remain in the pouches will probably help to keep infection away In 18 cases treated by Spriggs [55] 13 were completely relieved by medical treatment I have once excised a pouch about one and a half inches long and half inch in diameter from the outer side of the second part of the duodenum, and I had once pleated one into the duodenal wall Stiles has related to Spriggs a case in which he removed a pouch the size of a hen's egg, which sprang from the concavity of the duodenum and contained masses of pancreatic tissue in its wall Gastro-enterostomy when the pouch is large, adherent, and infected may be advisable, for in such circumstances duodenal obstruction may be severe [51] Surgical treatment is needed, however, *only in very rare conditions, for the orifice of the* pouch is, as a rule, large enough to allow of the easy escape of contents when an appropriate position is taken Removal of the diverticulum from the inner or posterior aspect of the second part of the duodenum may present the most formidable difficulties Case [11] records an example of duodenal diverticulitis with complication of the common bile-duct in which cholecystotomy gave relief

Diverticula of the Jejunum and Ileum

Diverticula of the small intestine of both jejunum and ileum are occasionally seen. Meckel's diverticulum is a well-known anomaly, and its surgical possibilities are quite understood Jejunal diverticula may, though rarely, cause distress The best example I have ever seen occurred in the practice of my colleague, Mr Braithwaite Enterectomy was necessary, and the very beautiful specimen is now in the Museum of the Royal College of Surgeons The diagnosis was made after a radiological examination by Dr L A Rowden The first diagnosis ever recorded stands to the credit of Dr Case Gordinier and Sampson [19] record an example of multiple diverticula of the jejunum , 13 pouches were found in a length of 40 cm All the pouches were on the mesenteric border One of them had become inflamed, causing partial occlusion of the lumen of the bowel Hansemann [34] *reported one case* in which over 400 diverticula were found, the majority were in the jejunum , and another case in which a diverticulum from the upper part of the jejunum contained pancreatic tissue at the fundus Boker,[7] in an inaugural dissertation, reported a remarkable instance of multiple diverticula , there were two in the duodenum, many in the small intestine, many in the colon, and one in the urinary bladder One of the jejunal diverticula had ulcerated and undergone subacute perforation A case occurring in an infant 5 weeks old is recorded by Cautley [12], a cyst which was formed by the pouch had two openings into the intestine , it was larger than the stomach and had caused obstruction Scot Skirving [53] has carefully discussed this condition, which is not, I believe, nearly so infrequent as we suppose, though it rarely causes symptoms The pouches may be numerous, are rarely larger than a walnut, are usually on the mesenteric side, and because of their large orifice do not, as a rule, retain food for long periods, and do not, therefore, often lead to serious complications.

Diverticula of the Large Intestine.

This condition is a common *one* At first recognised by the pathologists, it was hardly considered by the clinicians until the increasing frequency of abdominal operations and the aptitude of radiologists revealed the truth

The earliest description, perfect and almost complete in its accuracy, was given by Cruveilhier [16] In *recent* years attention was attracted to the subject by Graser,[21] by Beer,[3] and especially by Maxwell Telling,[57] and with *Gruner* [58] *The first case* recognised and recorded in this country occurred in a patient referred to me by Dr Helm,[26] of Carlisle The patient was operated upon for a duodenal ulcer causing hæmorrhage , attacks of intestinal obstruction had occurred, and the routine examination of the abdomen disclosed a "growth" in the sigmoid flexure which I excised Mr Harold Upcott examined the "growth" and proved its true nature This discovery led to our active interest in the subject and to the extended observations of Dr Maxwell Telling in the post-mortem room, and of my own in the operation theatre Cases soon occurred to show the frequency of the disease Patients were seen with "*left-sided* appendicitis" with "vesico-intestinal fistulæ," and with tumours in the left half of the colon believed to be malignant, all the cases proving to be examples of this disease An examination of several specimens in museums showed that "carcinoma of the colon" was often due to an inflammatory hyperplasia , and the truth of Harrison Cripps's [15] *observation that fistulæ between the colon and the* bladder were due more often to simple than to malignant disease *was confirmed Our knowledge* of the earliest phases of the disease, of its frequency and extent, of the method of formation of the pouches and of the slow rate of increase in many cases is due entirely to the radiologists, among whom that accomplished artist, Mr O A Marxer, deserves mention for his discovery of the "prediverticular stage"

Diverticula are found in all parts of the colon, most commonly in the appendix, least frequently *in the* rectum Spriggs and Marxer[54] found them 100 times in 1000 consecutive examinations They found only five cases in the appendix, where the disease occurs quite frequently in association with chronic appendicitis I have certainly seen it not less than 200 times. In *the* rectum it is a cause of multiple fistulæ more often than is supposed , the failure *of many* operations for this condition is *owing to a lack* of appreciation of this truth The cause of the condition is a yielding of the intestinal wall, assumed *to* be the result of long-continued increased pressure within the lumen of the intestine The gut yields at its weak places, at points where vessels pass through the muscular coats, or where appendices *epiploicæ* are attached The mucosa stretches the muscular coat, and finally perforates it as the diverticulum increases in *size* I am of the opinion that in some cases at least the disease may be congenital in origin For the smaller pouches may show all the coats of the intestine, in this sense being "true" , and the history of the case occasionally *dates back to the early years of life* There is certainly in some cases a muscular weakness of the intestinal wall, which *makes* the development *of* diverticula more easily possible The shapes *of* diverticula vary Often they have *the contour of* a flask with long, narrow neck and oval cavity. Into the cavity fæcal material enters through *the* tubular neck, and finds *difficulty* in escaping As it lodges there in slowly increasing amounts it enlarges its containing cavity, and at last *may set up inflammatory* changes

CONDITIONS DEVELOPING IN DIVERTICULA OF LARGE INTESTINE

The following conditions may then develop —

1 *Diverticulitis* —Attacks of acute and subacute inflammation due to infection of the diverticulum by its retained and septic contents

2 *Peridiverticulitis* —Inflammation round a number of diverticula results in a large indurated solid mass , the intestinal wall becomes greatly thickened and there is often a close mimicry of carcinoma

3 This inflammatory phlegmon may undergo cicatrisation and contraction, causing a *stenosis* , in consequence of this *obstruction* of the intestine, acute, or chronic, or acute supervening upon chronic, may occur

4 *Local peritonitis* around the diverticula, in consequence of their deeper penetration of the intestinal wall, with infection of the peritoneum clothing the outer surface of the gut This may result in *adhesions* between the involved intestine and any neighbouring viscus or the abdominal wall *Fistula* may form and lead *to the small intestine*, the bladder, or on to the anterior abdominal wall or ischiorectal fossa Vesico-intestinal fistulæ are more frequently *due to* diverticulitis than to any other cause

5 As the diverticula deepen, ulceration may occur at the base of them and in consequence a *perforation* may result In this way acute general peritonitis, subacute localised peritonitis, a localised abscess, or suppuration in a hernial sac may be caused

6 *Chronic mesenteritis* may be caused by the diverticula insinuating themselves *between* the leaves of the mesocolon, especially of the sigmoid flexure

7 *Carcinoma* of the colon or the rectum may *be a result* of the chronic irritation of the stagnant and putrid contents of the diverticula Judd and Pollock doubt whether the incidence of carcinoma is greater in the patient suffering from diverticulosis than in the normal individual. ,

A "prediverticular state" of the colon has been thus described by Spriggs and Marxer[55]

"The appearance (in the radiograph) is characterised by a ragged outline of the wall of the bowel which does not dilate even in the most favourable position. If one aspect only of the wall is involved the contraction is less This appearance is not the result of irritation from the small hernia but precedes their formation."

They believe that in this stage there is a weakening of the intestinal wall due to thinning of the muscular coat, which allows the penetration of the mucous membrane under pressure

Symptoms —Multiple diverticula may exist without causing any clinical manifestations Vague intestinal discomforts and some causes of "colitis" are explained by their presence Chronic constipation is their frequent, but certainly not invariable, antecedent Constipation may sometimes be the cause of spurious diarrhœa, the bowel, though discharging its contents freely and frequently, shows on X ray examination an inertness responsible for delay in the passage of the fæcal mass As the pathological changes advance the following clinical groups may be recognised ·—

1 *Inflammatory* —The patient suffers from recurring attacks of greater or less severity, in which localised pain, tenderness, rigidity, and swelling are present Temporary intestinal difficulty accompanied by vomiting may be observed The symptoms are so similar to those caused by inflammation of the appendix that "left-sided appendicitis" is spoken of in many instances A large phlegmon occupying the iliac fossa is not seldom found and in two cases of mine proved to be caused by diverticulitis associated with actinomycosis In other forms an acute general peritonitis is found, and at the operation a perforated diverticulum is disclosed A case of perforation of a cæcal diverticulum mimicking acute appendicitis is recorded by Pereira[44]

2 *Obstructive* —Chronic intestinal difficulty, with periodic attacks of exaggerated difficulty amounting to temporary obstruction, is not infrequent, in the severer cases a complete intestinal obstruction may be present The symptoms resemble those of carcinoma

3 *Fistulous* —The passage of fæcal matter and air by the urethra indicates that a communication exists between the intestine and the bladder The opening may be seen with a cystoscope The frequent cause is a diverticulitis of the sigmoid flexure Fistulæ may open on to the skin of the abdominal wall, or rarely on the buttocks and in the ischiorectal fossæ

4 *Pelvic* —An inflammatory mass is found in the pelvis, and in the female is attributed to disease of the uterine adnexa The symptoms are often very similar to those of salpingitis and pyosalpinx

The association of diverticula with infections elsewhere, especially in the teeth or in the facial sinuses, must be remembered *Bacillus coli* infection of the bladder or kidney is sometimes associated with this disease, but rather as an effect than as a cause

DIAGNOSIS AND TREATMENT

Increasing experience of this disease allows a diagnosis to be made with accuracy in the more pronounced types But all clinical evidence is subordinate to that offered by the radiologist In cases where a tumour is present, the duration of the disease, its wavering course, the liability to attacks of inflammatory disturbances alternating with intervals of freedom, the absence of blood in the stools, the presence of mucus in excess, will all suggest a simple rather than a malignant origin

In the great majority of cases *medical treatment* will keep the symptoms in check All possible sources of infection must be investigated A diet leaving little residue is the one generally advised, but I am not sure that a diet leaving a bulky residue is not better, provided that the bowels act once or twice daily Paraffin is given twice daily, at first in amounts as large as the patient can tolerate, and later in diminishing amounts A large soap-and-water enema slowly administered once every week or ten days may be given, especially in the earlier months of treatment, and a very large dose of bismuth may usefully be administered from time to time in the hope of subduing infection Operative treatment is directed only to the needs of the severe cases The extent of the disease in some cases makes removal prohibitive. I have performed colotomy in cases of severe obstruction, and after the lapse of one or two years have been able, after the disappearance of the tumour, to close the intestine The first case upon which I did this occurred in a patient now 86 years old Mayo Robson had performed colotomy for a large mass low down in the pelvic colon causing obstruction The lump gradually disappeared and the lumen of the bowel became patent There has been no intestinal difficulty since the closure and the patient has survived a prostatectomy subsequently performed The general surgical indications and methods need no special mention here

I was recently reading once again the life of William Hey, the founder of the Leeds Infirmary, and the first of the Hey dynasty, which served our hospital from 1767 to 1895 The account of his illness, death, and post-mortem examination leave me in no doubt that diverticulitis had led to a perforation of the large intestine

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Few subjects in surgery are so littered with inaccurate references and incorrect names as this With the help of Mr Powell, of the Royal Society of Medicine, I have prepared the above list I am greatly indebted to Prof J Kay Jamieson for his dissections which made clear the point of origin of the lateral pharyngeal diverticulum

MULTIPLE DIVERTICULA OF THE COLON

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(WITH ILLUSTRATIVE PLATE)

Introduction.

IN the course of the observation and treatment of 208 cases of multiple diverticula of the large intestine it has been possible to study a great number of instantaneous photographs of the affected part of the bowel and, in some cases, to watch the progress of the disease over a series of years Many of these observations have been reported in former papers[1] It is proposed in this account to set forth the radiographic features of the stages of diverticulosis in somewhat more detail, and to summarise the clinical aspects, which have been more fully described elsewhere[2 3 4]

The definition we suggest for diverticulitis and the sections on ætiology, prognosis, and treatment, also some of the illustrations, are based upon the remarks made, and the slides shown, by one of us in opening the recent discussion on diverticulitis at the Royal Society of Medicine[4]

Multiple diverticula of the colon have been recognised for over a century by pathologists, but not till the last ten years, since the radiology of the bowel has grown more precise, has it become known how often they are present, and are the cause of disease A summary of the history of the subject is given in a former paper in the *Quarterly Journal of Medicine*[2] References will there be found to various papers up to 1924, including the monographs of Bensaude, Caine, and Hillemand (1913) and of Telling and Gruner (1917), who give large bibliographies Papers we have been able to consult which appeared from 1925 to 1927 are mentioned in the report on the above-mentioned discussion[4]

Statistics

Some stage of diverticulosis of the large intestine was found in 10 per cent[5] of 1000 consecutive patients admitted to this hospital in whom an X ray examination of the alimentary canal was made, two men being affected to one woman From this frequency it may be assumed that it would also be found in some of those complaining of symptoms not thought to concern the alimentary canal, and who were not examined with barium Further, since half the people with small diverticula of the colon suffer no inconvenience therefrom, they are probably present in a not inconsiderable proportion of the general population over 50 years of age

Diverticulosis is nearly always found in the latter half of life The average age of 1000 patients was 45, that of 100 diverticulous ones being 58 The condition has been described in children, but is rare; the youngest in our series was 25

The distribution of the diverticula in 166 consecutive cases was as follows —

Pelvic colon	120	Whole colon	24
Descending colon	79	Cæcum	8
Ascending colon	33	Appendix	6
Transverse colon	33	Rectum	4

The Stages of Diverticulosis

We have previously described the following stages in the development of multiple diverticula of the colon

(1) *The Prediverticular State* —This is illustrated by the full page photograph, Fig W, which shows a large piece of the descending colon at this stage The normal segmentation of the bowel is absent, being replaced by a ragged outline of little convex irregularities These are best seen quite close to the arrow leading from the word "colon," but are evident along the whole course This photograph (which we have published formerly but in a much smaller size) is a good one for showing what is meant by the prediverticular state, but it is seldom that so large an area of the bowel wall is involved The prediverticular state is often seen along one side of the bowel only, it may be seen in even part of one haustrum (Fig A), the rest of the haustra and the opposite aspects of the bowel wall showing healthy outlines In nearly all cases small diverticula can be seen in some part of the bowel at the same time as the prediverticular state, or if the case is observed again at intervals they will be found to develop at that area This stage precedes the formation of the pouches, and it is apparently associated with some weakening of the submucosa and of the muscular layers, it is while the prediverticular state is in evidence that the minute herniæ, which subsequently form diverticula, are pushed between muscle-fibres

(2) A stage of irritation is often seen to follow the prediverticular stage This is shown on the lower border to the right in Figs C and S Since the prediverticular state was first described, some writers have mistakenly regarded that appearance as what was meant The larger concertina-like appearance, however, is usually to be observed in a part of the bowel which has formerly been in the prediverticular state.

(3) *The Developed Diverticula* —These are of various sizes and shapes, some of them, even large ones, may contain all the coats, including muscle-fibres, as is shown by the fact that they can be observed to contract In a few instances even large pellets of fæces can be passed out of them from time to time if the necks are wide enough and not inflamed Indeed, these masses appearing in the fæces have sometimes been called soft gall-stones Others of the developed diverticula show very little muscle-fibre The shadow obtained with barium meal or enema differs according to the width of the neck of the pouch If the neck is wide enough the barium may enter the whole of the diverticulum and fill it, as shown in some of those in Fig V (illustrative plate) If the neck is narrower the barium does not displace the former contents, but fills only the lower part of the pouch lying next to the neck, giving a crescentic shadow such as is also seen in Fig V These crescentic shadows are characteristic. When the neck of the diverticulum is very narrow, material cannot get out and hardens *in situ*, forming what is called a stercolith A stercolith of long standing may cause a shadow which can be recognised without a barium meal

(4) *Diverticulitis* —At this stage inflammatory processes arise about the necks of pouches, especially of those containing stercoliths, and spread to the wall of the bowel, giving rise to a local colitis or pericolitis.

Method

The opaque meal found to give clear pictures of detail consists of 120 g of barium sulphate suspended in 500 c cm of Horlick's malted milk or buttermilk This appears to fill every crevice in the colon, and has often shown diverticula that had remained undetected with other suspensions The enema consists of 400–450 g of barium sulphate made up to two pints with buttermilk, warmed to body temperature The meal enables certain points to be observed, the enema others For example, the former, which mixes with the secretions and is more like the natural ingesta, shows the distribution of the food and its rate of passage along the gut, especially before and after defæcation, any constrictions or spasm and the position of the ingesta at times of pain or discomfort; it may also fill stercolith-bearing diverticula better than the enema, whilst with the latter it can be seen how far the different parts distend normally or are constricted In over 200 cases observed with both meal and enema, in only two did the enema fail to show diverticula

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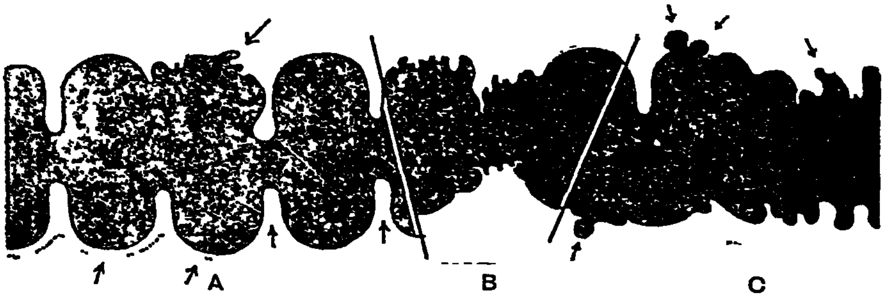
[1] Proc Roy Soc Med., Surg Sect, 1920, xiii, 65
[2] Quart Jour Med, 1925 xix. 1–34
[3] Brit Med Jour Jan 23rd 1926
[4] Proc Roy Soc Med, 1927 xx, 665
[5] Since our former papers were published a certain number of patients has been admitted in whom the disease was already suspected or diagnosed, increasing the incidence by selection But that was not the case during the time from which the above quoted series was taken

Both screening and radiography must be employed, the one guiding the other, all parts of the bowel being brought into view at some time with either meal or enema If this cannot be done the examination is so far incomplete This applies especially to cases in which diverticulitis is suspected The mere demonstration of residues showing the presence of diverticula must not be the height of the radiographer's ambition All possible data must be gathered to ensure a reliable judgment as to diagnosis, prognosis, and treatment

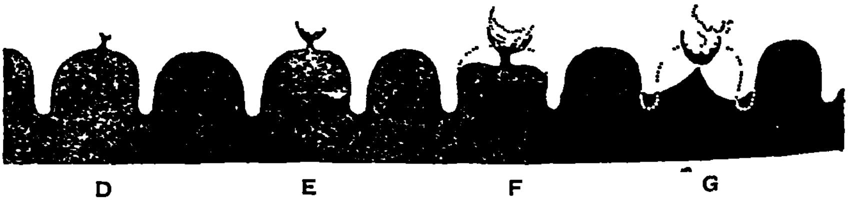


A' = Normal haustra below and small patches of prediverticular state above
B = Areas of prediverticular state involving circumference of bowel and causing apparent ring constriction
C] = The same piece of bowel (as B) after treatment No constriction Irregularities, the aftermath of prediverticular state, also small pouches in formation

In all these figures (A to U) the text should be consulted for the full description

It is reported that diverticulitis may be present without radiographic demonstration of diverticula This is not yet within our experience, but is, of course, possible, though unlikely if both meal and enema are used In any case a localised diverticulitis, even after all pouches have been deformed beyond recognition, has the characteristic appearances described below

The normal bowel wall is generally engaged in a slow contraction or dilatation This can be demonstrated by taking serial films at one second's interval, with an instrument like a slow cinema camera, designed by one of us When such a film is placed accurately upon another one the extent of the movement can be seen A rigid piece of bowel wall, the seat of diverticulitis, shows no movement and can by this means be recognised



D = Small narrow necked diverticulum retaining fæcal material
E = The same diverticulum four years later
F = Large stercolith bearing diverticulum The dotted line shows the position at phase 1 of a serial film, the continuous outline at phase 2—i e, one second later—demonstrating the movement of a haustrum
G = Also from serial films showing the maximum contraction of this haustrum

When a lesion lies within reach of the sigmoidoscope that instrument should be employed With suitable preparation and care its use should be painless, and no general anæsthetic needed

Development of Diverticula

The radiographic appearance of scalloping in the normal colon is known as haustration, and any single scallop as a haustrum The lower silhouette of Fig A shows such a normal outline of a barium-filled bowel, the dotted line represents the peritoneal surface The arrows on the left of the letter "A" indicate the haustra

The deep indentations which almost bisect the lumen of the colon determ [illegible] segmentation (see the two arrows on the ri [illegible] ter "A") They are regular and symme [illegible] e bowel be bent at an angle The co [illegible] res cause the segmentatio [illegible] of the bowel wall The [illegible] o

clefts or divisions between the haustra, but does not enter them

A simple mucosal lesion of the bowel does not always give radiological signs of its presence, but when the submucous and muscular layers are involved the normal segmentation of the colon is altered and the change is visible

The temporary absence of segmentation during mass movements is called inhibition

In the following more detailed study of the development of diverticula each figure is, unless otherwise stated, an exact tracing from a photograph, and not a diagram The black area is the barium filled lumen of the bowel

Prediverticular State—In the early prediverticular state, if only small patches are affected, the shape of the haustrum may be almost unaltered, provided the patch is not near an interhaustral cleft If it is, a curtailment in depth and a displacement of the cleft result

Fig A is a tracing from a stretch of sigmoid showing such a spread-out haustrum The small indentations denote the prediverticular state The arrow above points to a minute hernia or diverticulum Owing to the diverticulosis the upper two haustra have come together, the cleft between them having almost disappeared This shows how the irregular segmentation arises in a diverticulous bowel On the opposite aspect of the bowel, the lower in this photograph, both haustra and clefts are regular If the prediverticular state involves large areas, haustration may become unrecognisable, and segmentation disappear If only one side of the bowel is involved there will be interference with the diameter of the lumen, when the whole circumference of the bowel is implicated, narrowing is considerable, and a ring constriction may be simulated

Fig B shows such a piece of bowel Part of the upper border was prediverticular, and another short stretch is involved in its whole circumference Note the consequent encroachment on the lumen as compared with the lumen in Fig A

Fig C shows the same stretch of bowel after treatment There is now no constriction Small pouches are visible on both borders, shown by arrows

In the prediverticular state the circular muscle fibres are contracted, as is shown by the narrow lumen, and the mucosa is thrown into narrow folds It may be presumed that the longitudinal fibres are also involved After the passing off of the prediverticular state the haustra and the clefts between them tend to lose their symmetry The appearance suggests that muscle-fibres are damaged, being thinned in places, with corresponding bunching in others, as when an elastic band is cut or weakened in one place Judging by repeated observations at intervals of a year or more, any given haustrum tends to remain distorted in the same manner, and thus haustral asymmetry may persist in an otherwise flexible diverticulous bowel.

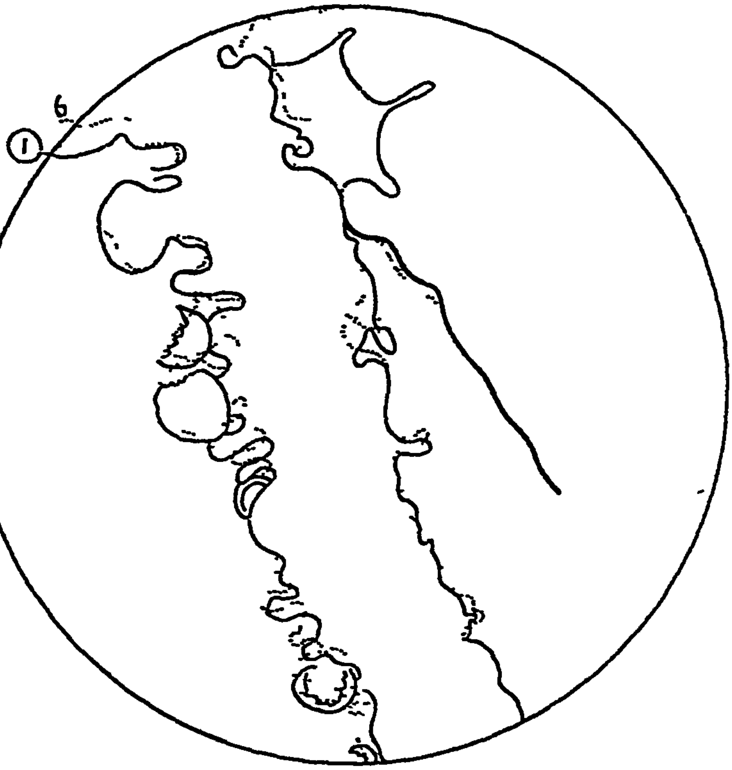
This is the stage 2 mentioned above. See the irregular nondescript contractions deforming the lower border of the bowel in C, the aftermath of the prediverticular state. This appearance occurs without excess of fat or evidence of any thickening of the wall.

Formation of Pouches.—When the small hernia forms, local conditions determine the size and position of the orifice, and upon these depend the type of pouch which will be developed.

In Carman and Miller's book on the "Roentgen Diagnosis of Diseases of the Alimentary Canal" (1917, p 471) is an excellent photograph of a microscopical section, showing a pouch of mucous membrane penetrating the muscular layer.

We have pointed out in former publications that the rate of emptying of a pouch depends on the size of its neck. This consideration, which is obvious enough, grows in importance with further study of small diverticula. The pouch which is likely in the future to set up diverticulitis is the one which cannot easily discharge its contents, and which barium enters in part only, giving a crescentic shadow. The content of such a pouch is liable to become inspissated and form a stercolith. We find that some pouches show these characteristics at a very early stage, for we see often minute herniæ with the appearance of stercolith-bearing diverticula.

FIG. H.



H = Tracing of two instantaneous photographs from the descending colon shown in Fig V, being phases 1 and 6 of a serial film—that is at about six seconds' interval—superimposed. Phase 1 is the continuous and phase 6 the dotted line. (See description of Fig V.)

Fig D shows such a diverticulum at an early stage. The bowel wall from which it arises is soft and flexible. The small pouch itself is spherical, but owing to its narrow neck it retained inopaque material when the food residues left that part of the gut, and there was no room for the opaque barium mixture except at its basal part.

Fig E is from the same case four years later. The haustrum is unaltered, though the pouch is much bigger. As before, the barium has crept round the fæcal content near the neck.

Fig F shows two phases of a serial film. There is a pouch with a stercolith. The dotted line shows the position in phase 1, and the continuous outline that in phase 2. There is a moderate degree of contraction of the dome of the haustrum.

Fig G, a later phase, shows the maximum contraction. The neck of the diverticulum is no longer showing, which means that its mucosal surfaces were apposed.

Fig H shows tracings of two instantaneous photographs at about six seconds' interval—i e , phases 1 and 6 of a serial film, from the descending colon of Fig V, superimposed, phase 1 being the continuous, and phase 6 the dotted line. The bowel wall is seen to be mobile, with its diverticula. The large diverticulum at the top on the left is capable of contraction. The stercolith-bearing one below it keeps its shape, but its position has changed with the movement of the part of the bowel from which it arises.

The Onset of Inflammation about a Diverticulum.—Fig. I shows again a pouch containing a stercolith. The block is, as before, the tracing of an actual film. The dotted line represents schematically the peritoneum. This is taut over the stercolith where the other coats of the diverticulum will also be thinnest. This is why such pouches are stiff and more spherical, whilst those with flexible muscular walls become somewhat pear-shaped during contraction.

When inflammation sets in there is a limitation of the flexibility of the bowel wall. The study of serial films at intervals shows that rigidity—i e , inflammatory change—begins at the necks of diverticula and particularly of those which carry stercoliths. Tension or friction in the narrow neck suggests itself as a cause, though perhaps stagnation beneath a stercolith is an equally harmful factor. Dr. A P. Cawadias[6] has described the microscopical appearances in diverticula which emit fæcal material with difficulty, the round-celled infiltration extending towards the serous envelope.

The earliest radiological sign is an encroachment on the haustrum as shown by a widening of the re-entering angle between the diverticulum and the bowel. This cup-shaped widened angle is shown by the arrows in Fig J. The encroachment is seen most plainly during inhibition. It may be symmetrical or one-sided; in the latter case there will be a tilting of the diverticulum. In other words, two deep indurations, which have the appearance of invagination, are seen during stages of relaxation.

Fig K is a tracing from another film. The arrow shows such early inflammatory changes. Note the apparent sinking into the haustrum of the diverticulum. The peritoneal surface is added schematically, the shaded area representing fat.

In Fig L the inflammatory thickening (often called hypertrophy) is more advanced and is asymmetric. The lumen of the neck does not show; it is squeezed and contains no barium.

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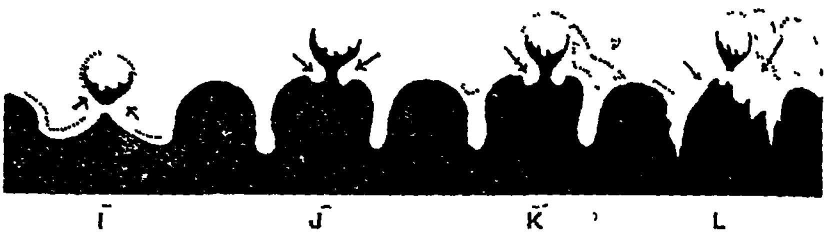
[6] Proc Roy. Soc Med , loc cit , p 691

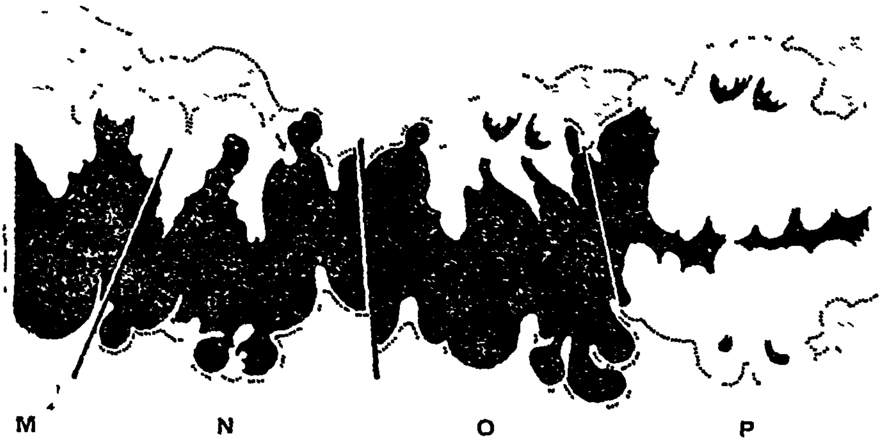
The inflammatory exudation and resulting fibrosis may affect certain wide-mouthed diverticula in quite another way, opening their orifices until nothing is left of the pouch but a stiff V-shaped irregularity with the open part facing the lumen The small projections from the black shadow on the upper border in Figs M and N show the remains of such pouches



I = A stercolith bearing diverticulum during maximum contraction of its haustrum The peritoneum is shown diagrammatically
J = Widening of the re entering angle at the neck of a diverticulum, the earliest radiological sign of inflammatory thickening of the bowel wall
K = Early inflammatory thickening showing the peritoneal surface schematically
L = More advanced thickening Note distance of lumen from peritoneal surface Cf I

On the lower border in Fig N two diverticula show evidence of thickening and rigidity of the bowel wall, but it is possible that they have been reached by extension of the process from the opposite side, just as the otherwise natural haustrum at the right on the upper border shows evidence of encroachment (see arrow) As the fibrous thickening increases at the expense of the haustrum, the more the stercoliths become separated from the lumen, as in Fig O, which shows 4 cm of bowel much involved on one side by inflammatory changes The dark isolated crescentic areas represent barium which entered by a narrow channel not visible in the film, and lies beneath stercoliths The diverticular necks appear to be, and no doubt almost are, obliterated The opposite, lower, aspect shows two large flexible diverticula, the haustra from which they arise, as well as the adjacent haustra, were over-active

Fig P is from the same piece of bowel as O but four years later. It shows how far the stercoliths have become separated from the exceedingly narrow lumen. The affected area is remarkably localised, for immediately below it (to the left) the lumen widens abruptly to its natural diameter This point was about 28 cm from the internal anal sphincter



M = Great thickening of bowel wall Diverticular necks opened up
N = Evidence of spreading of inflammatory changes to opposite lower wall
O = Isolation of diverticula from the lumen of bowel
P = The same four years later showing advanced obliterative stage

The characteristic radiological sign of diverticulitis, as mentioned below, is rigidity of the deformed bowel wall (Fig Y on illustrative plate and Fig. Z)

Inflamed mucosal folds give confusing appearances in diverticulitic films Serial photography is often the only means by which they can be differentiated from the fibrous thickening of the outer layers of the gut These folds are, of course, transparent to X rays and form the apparent clefts between the opaque barium-filled haustra In Fig Q mucosal folds (see arrows) have swollen into massive jagged nodes The peripheral inflammatory thickening was slight; there was enough to give some small diverticula an invaginated appearance, but not enough to prevent the bowel wall on which they lay from registering some movement in serial films To the right of the middle of Q, however, the palisade appearance is significant of massive inflammatory change This patient was operated upon and these conclusions confirmed. The figure is typical of the radiological appearance which would be given by many specimens of diverticulitic bowel such as are removed occasionally at operation, or, more often, post mortem

Swollen folds of mucous membrane are also the cause of the bulky invaginations in the shadow on the lower aspect of Fig. R, shown by arrows The rifts in the upper border of the shadow have the same cause It could be seen in serial films that when the haustra contracted so that the lumen was almost a thread, yet these did not recede or alter in size The bowel passes on the left into almost normal segmentation In this case areas of the prediverticular state and some minute diverticula were found close to the inflamed area

Association of Early Diverticulosis with Diverticulitis—We have several times observed that early disease—i e, either the prediverticular state or very small diverticula—is found close to an area of old-standing diverticulitis with stercoliths, all three stages together, and that in cases which have suddenly flared up, threatening obstruction It would be expected that the younger areas of disease had arisen from the older But early diverticulosis occurs in patches, and in two of our cases one of these separate areas appeared to be creeping towards the hypertrophic area rather than arising therefrom However this may be, it appears as if the encroachment of the new upon old standing disease had aggravated the chronic inflammation

Fig S is from a radiograph of a piece of bowel which is the seat of early and late stages of the disease. The arrows point to minute diverticula in process of formation in an area of the prediverticular state On the upper border are stercoliths and established rigid diverticulitic fibrosis

Fig T is from a patient who was admitted after an attack of subacute obstruction. We could not find evidence of inflammatory thickening though numerous large diverticula were present and some small ones Seven years later he had a recurrence of subacute symptoms and was readmitted. The same piece of bowel now gave Fig U. Small areas of the prediverticular state were seen and some minute pouches No evidence of gross thickening could be found in spite of careful search As there is no evidence of inflamed mucosal folds, although the last attack was recent, it appears probable that the threatened obstruction was due to severe spasm. The discomfort or pain corresponded on each occasion with the formation of new diverticula (See also Fig X on illustrative plate)

Ætiology

The ætiology of the disease is not yet understood In the first stage (the prediverticular state) there is irritation of the bowel wall with tenderness in that area on the X ray table and in some cases, in which a large part of the bowel is involved, pain is complained of clinically, though generally this stage is passed unnoticed by the patient. We have brought forward evidence[7] to show the frequent association of early diverticulosis with septic foci in other parts of the body, particularly the teeth, and with early arthritis of the spine—i.e, spondylitis This evidence leads to the view that the change is an inflammatory one in the first instance, probably bacterial, and not degenerative or passive That the small herniæ are prone to occur where the blood-vessels penetrate the bowel wall has been taken as evidence that they are passive extrusions from the beginning The lymphatics also penetrate with the blood-vessels, and it is possible that any inflammatory process, which would affect them more than the blood-vessels, would lead to weakness in their neighbourhood

How much constipation plays a part is not known The subjects are frequently constipated, but apparently not more so than other patients It is delay in the pouch, rather than in the bowel, which is harmful.

Flatulent distension of the bowel would be expected to aid in the formation of pouches and to cause enlargement of those already formed whose lumen is communicating with the bowel. The most serious result of diverticulosis, however—namely, the development of diverticulitis—arises from diverticula which have been almost completely blocked and would be least subject to changes of pressure from the interior of the bowel. It has been suggested that excess of fat plays an important part in the early stage of diverticulosis. The statistics of our cases, however, show that the diverticulous are not heavier than other patients of the same age and sex. In later stages, when diverticulitis threatens, fatty tissue around the bowel is probably less able to resist a spreading infection than the more vascular non-fatty peritoneum.

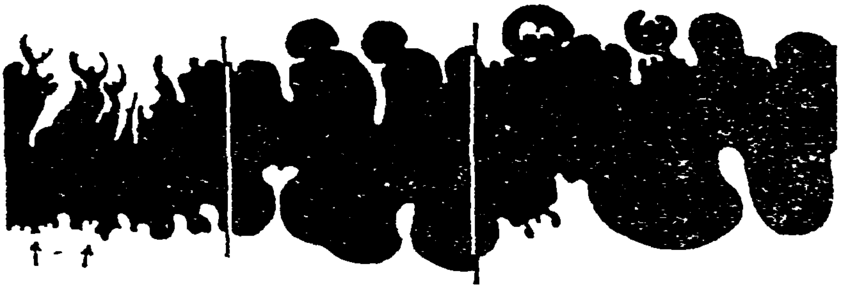
We have not observed any special association between spasm of the bowel and diverticulosis

Symptoms

As a rule, in the *prediverticular state*, no symptoms are recognised, though with increasing experience this rule is found to have exceptions especially if large areas are involved The area of the bowel affected, as observed with the X rays, is often in a more irritable condition than when diverticula are established. and is sometimes tender to palpation on the X ray table. In one case pain had been complained of in the lower and left parts of the abdomen for some weeks A great part of the descending and pelvic colon was found to be tender and in the prediverticular state and the symptoms yielded to treatment In another in which the colon was strewn with patches of the prediverticular state, pain was complained of as the barium entered the affected part of the bowel. In another in which most of the descending and pelvic colon was in the prediverticular state, these parts of the gut were tender and rigid, and there was aching over the sacrum after evacuation

Q = Shows the picture given by inflamed mucosal folds, also some small new diverticula superimposed on an old area of diverticulitis
R = Swollen folds of mucous membrane shown by arrows, also acute prediverticular stage supervening on chronic diverticulitis

The stage of *established diverticula*, short of diverticulitis, may be quiescent for years. In our series half the subjects complained of no symptoms referable to the pouches In the others there was some clinical evidence of irritation of the bowel, or, less often. of the peritoneum or bladder. The symptoms mentioned were, in order of frequency, flatulence, pain. distension or indigestion, generally below the navel and most often on the left side, pain or discomfort before or after defæcation. diarrhœa, or alternating constipation and diarrhœa. A few have irregularity of, or discomfort with micturition.



S = Acute early diverticulosis (lower border) supervening on an area of old diverticulitis (upper border)
T = Diverticulous bowel.
U = The same piece of bowel seven years later showing new disease supervening on the old area of diverticulosis

The symptoms of *rupture of a pouch* into the peritoneum are those of an acute local or general peritonitis This accident is fortunately uncommon The symptoms of diverticulitis are described in the following section

Definition of Diverticulitis.

Diverticulitis is the final stage of diverticulosis, at which the small pouches, as already described, become involved and destroyed in the chronic inflammatory process which in the first instance arose in themselves Sir Berkeley Moynihan drew attention to the clinical importance of this disease in 1907. Dr. Telling's papers (1908 and 1917), from the same school are an exhaustive pathological and clinical study of the condition.

Some seven years ago one of us proposed the term "diverticulosis" for the earlier stages of the disease, which are often free from symptoms and always, with the exception of the occasional rupture of a

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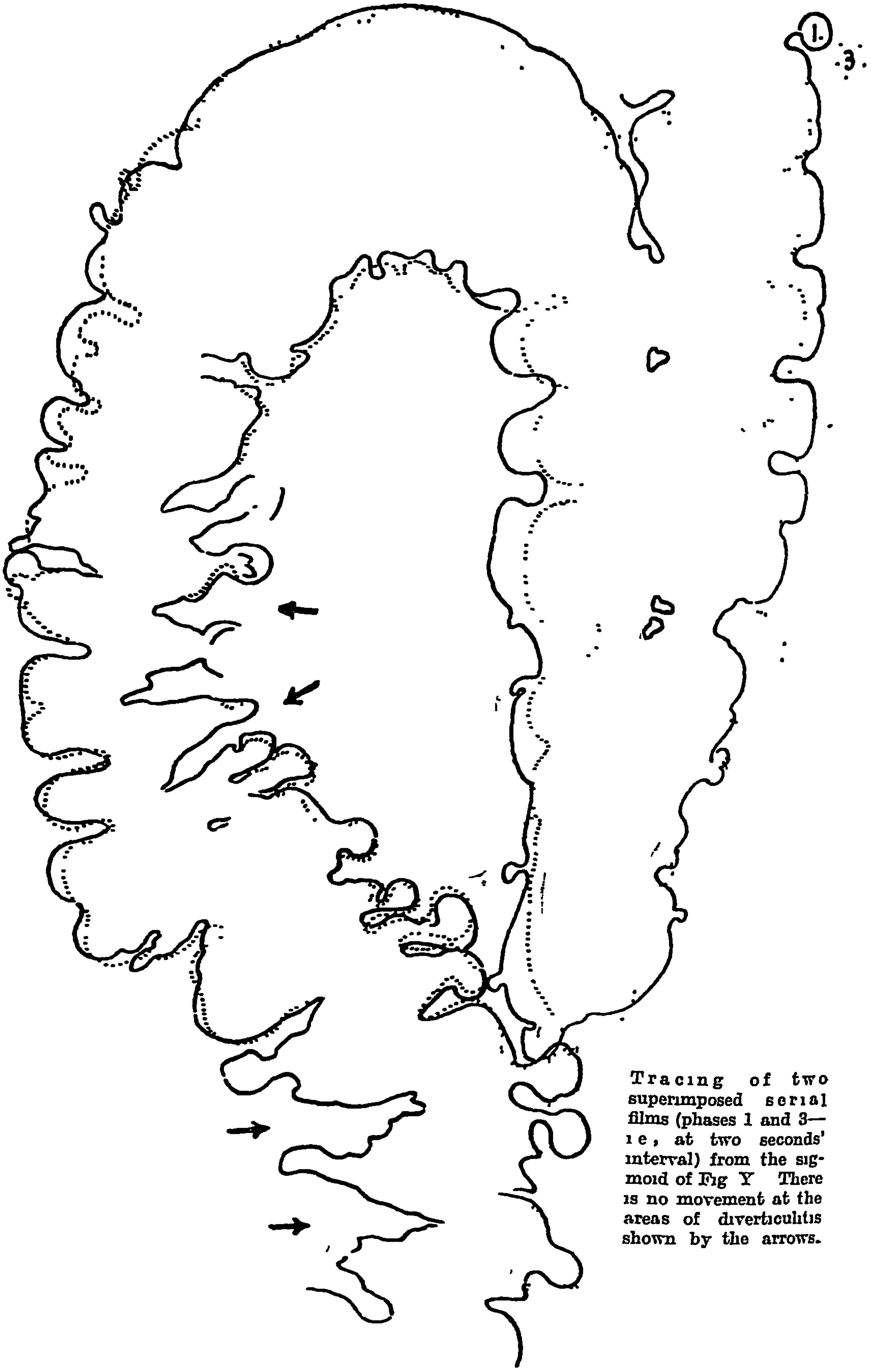
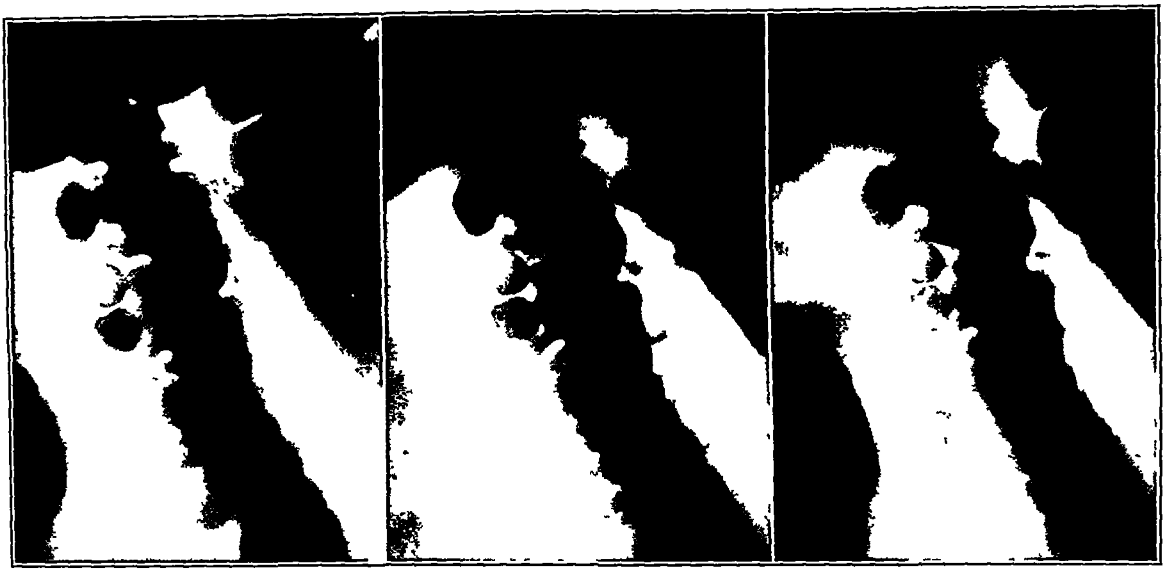
[7] Quart Jour. Med. loc. cit.

FIG Z



Tracing of two superimposed serial films (phases 1 and 3—i e, at two seconds' interval) from the sigmoid of Fig Y There is no movement at the areas of diverticulitis shown by the arrows.

FIG V



Diverticulosis Lateral views of descending colon, serial pictures, films 1, 3, and 6 There is some deformity but no rigidity as shown by the super-imposition of films in Fig H The bowel seen on the right of the picture is the transverse colon

FIG X

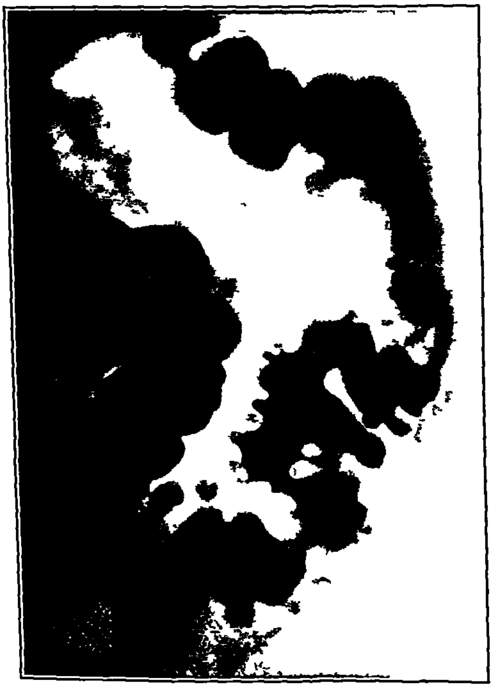


FIG Y

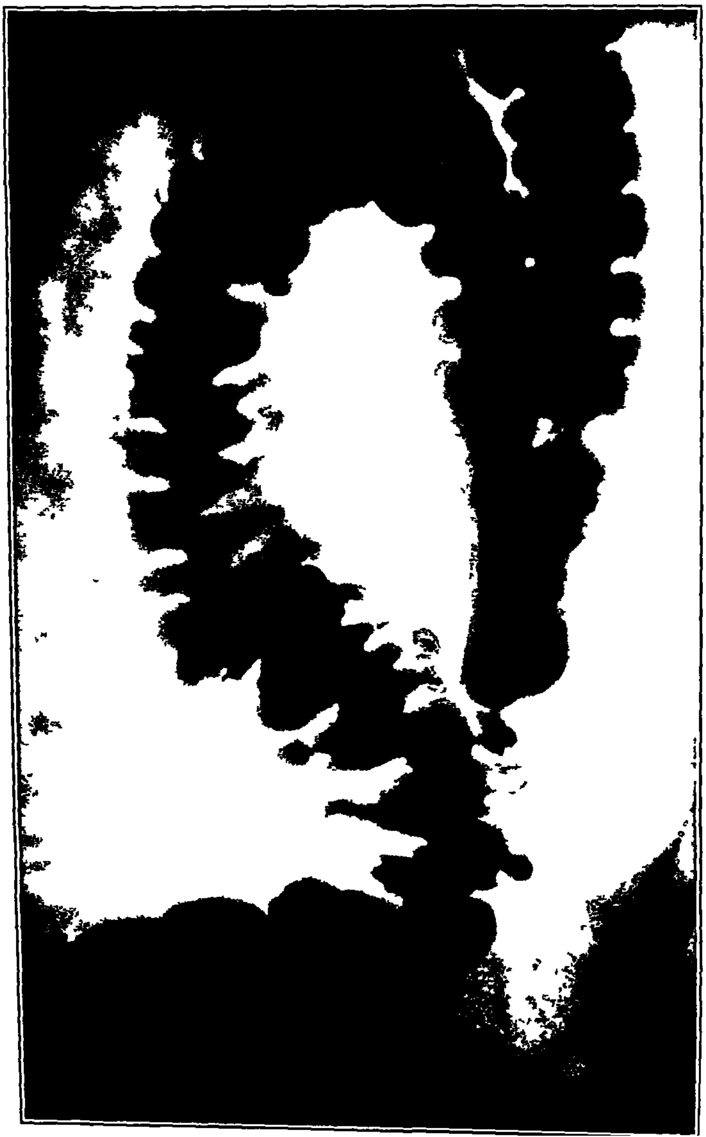


Fig X—Advanced diverticulosis of the descending colon No spiked processes or rigidity The absence of diverticulitis was confirmed at an operation for duodenal diverticulum and gall-stone, the sigmoid being found soft and flexible

Fig Y—Sigmoid showing two areas of diverticulitis these parts are rigid (see Fig Z) Note the jagged V-shaped outline of the immobile parts

DR E I SPRIGGS AND
MR O A MARXER

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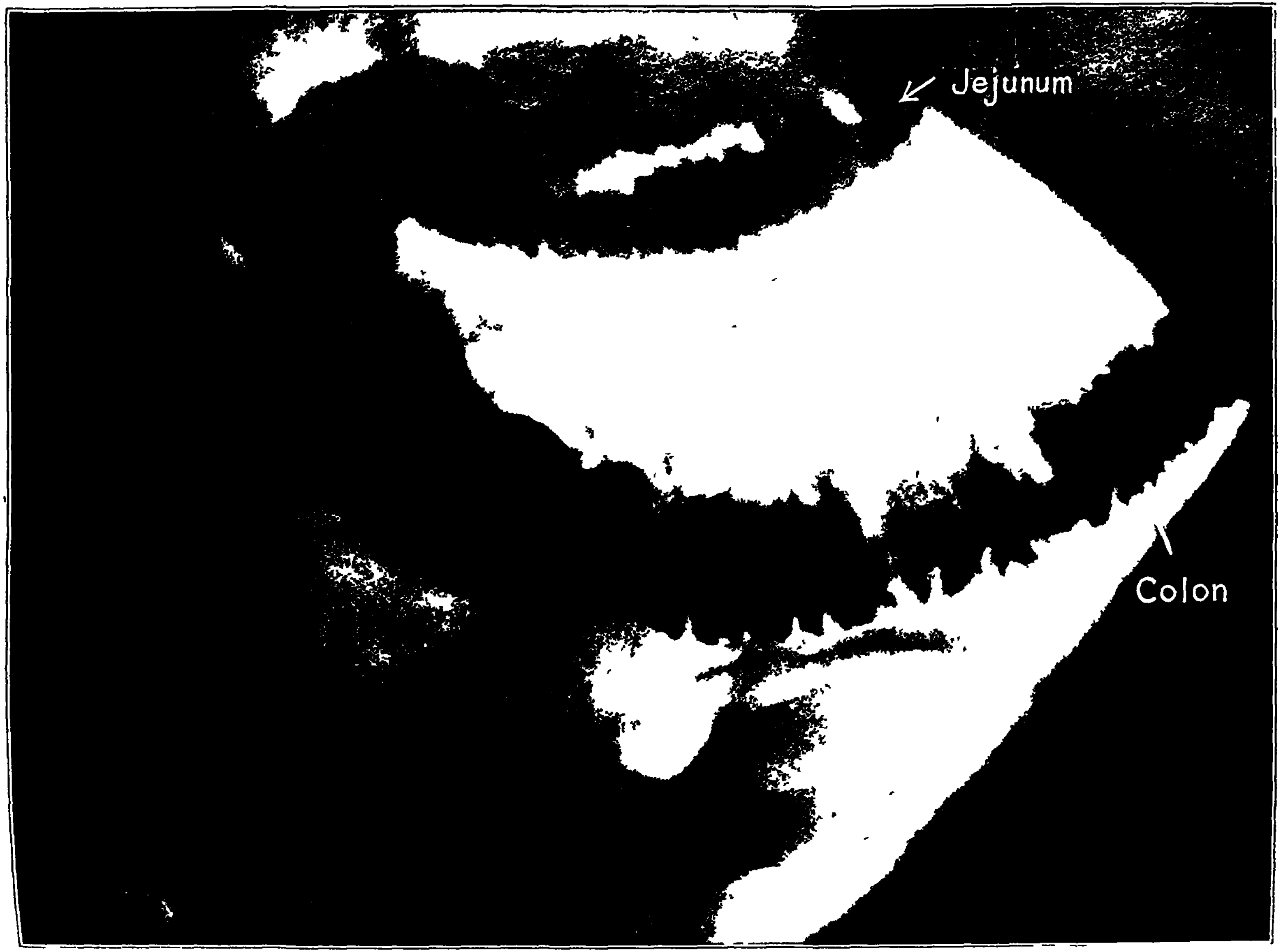
OF THE COLON

FIG W.



Oblique view of a prediverticular state of the pelvic colon Note the shallow convex impressions on both outlines from the pelvic brim upwards These are not to be confused with the deep serrations caused by spasm in other phases of the disease Note also how the colon simulates the appearance of the normal small bowel No diverticula yet present in the portion of bowel on the right small early ones can be seen to the left near the pelvic brim single pocket, free from severe symptoms We did not know until this year that de Quervain,[8] the Swiss surgeon, had made the same proposal in 1914 in a paper not then accessible to us Any degree of irritation and inflammation arising in a pouch may logically be described as diverticulitis But in practice a distinctive term is needed for the later stage which constitutes a definite and serious disease from which most of the subjects of diverticulosis never suffer

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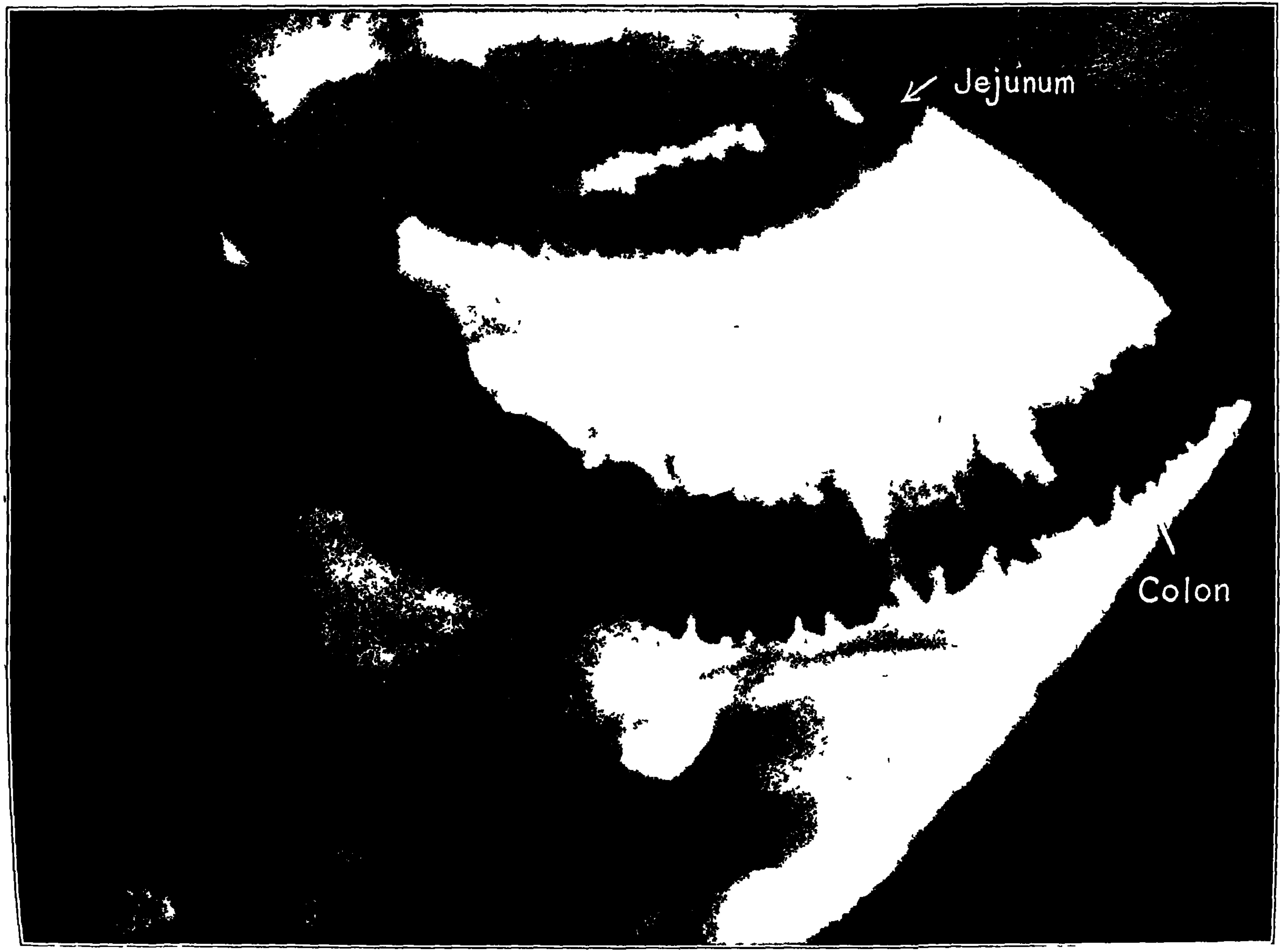
[8] Zeit f Chir 1914 cxxviii 81

[9] Proc Roy Soc. Med loc cit.

[10] Fifield L P THE LANCET Feb 5th 1927 p 277

FIG W.



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[8] Zeit. f. Chir., 1914, cxxviii, 81.

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[10] Fifield, L. R.: THE LANCET, Feb. [illegible]th, 1927, p. 277.

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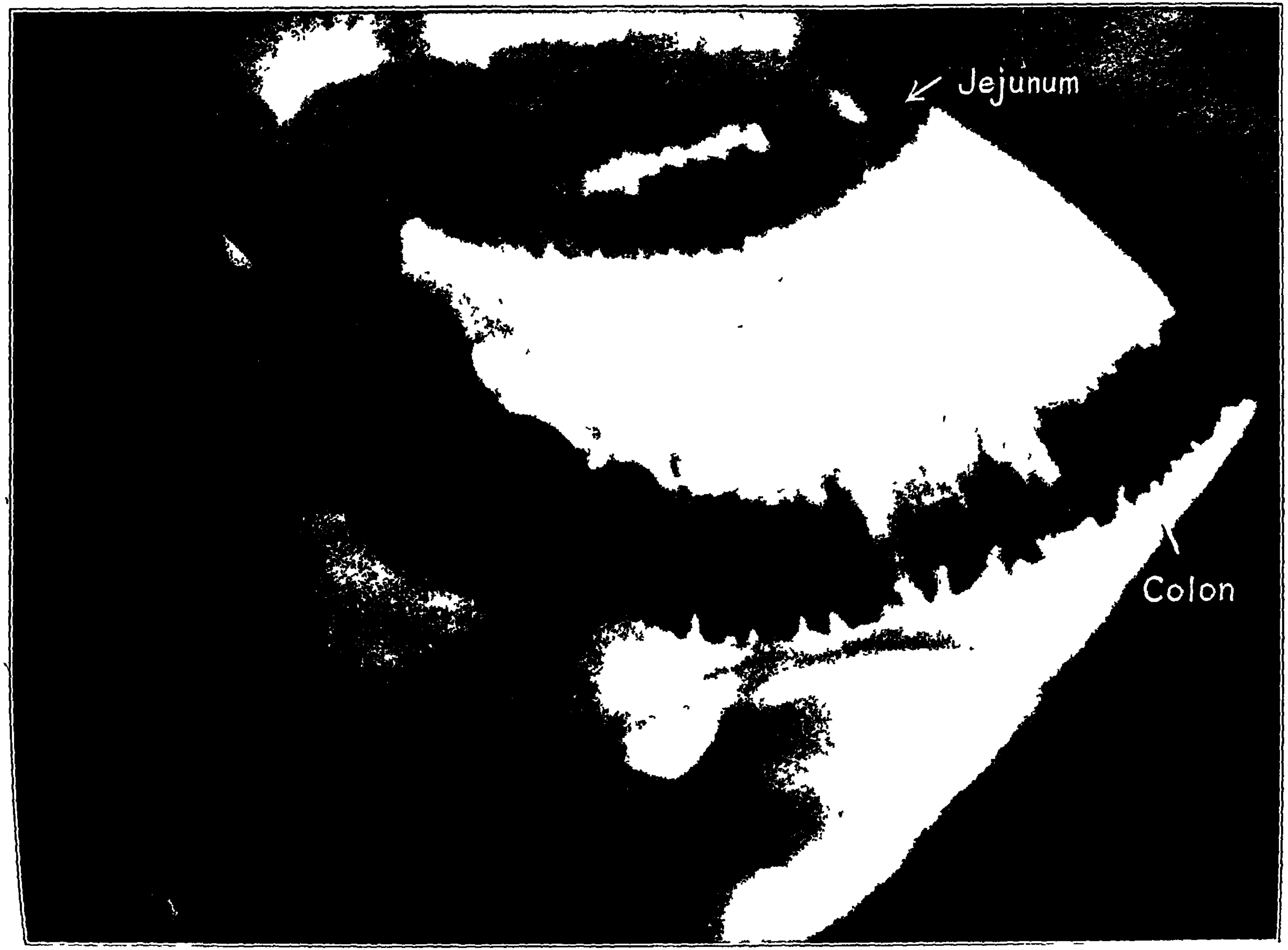

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[8] Zeit f Chir 1914 cxxviii 81

[9] Proc Roy Soc Med loc cit.

[10] Fifield L R The Lancet Feb 5th 1927 p 27

Treatment and Results

The medical treatment consists in keeping the body, the alimentary canal, and especially the colon, as healthy and clean as possible; any source of sepsis that can be reached must be removed. The diet should be simple and regular with a good deal of fruit and vegetables. We have described fully elsewhere[11] a diet which is found useful, but the preferences and state of each person must be considered. The bowels are kept regular by diet, paraffin, and especially by attention to habit; this can nearly always be done.

The colon is washed out with saline every other day, for a time, but at low pressure, the funnel being not more than 18 inches above the level of the anus. The fluid runs in at low pressure just as well as, or often better than, at higher pressure, which may provoke spasm. In no case, as we pointed out in our previous paper, should a diverticulous area be massaged. Only recently a man was admitted in whom a quiescent area had been awaked into subacute and painful diverticulitis by a course of massage given in ignorance of his state, with the object of curing the constipation.

We do not yet know to what extent repair may result after treatment of a prediverticular bowel. It is often considerable radiologically (cf Figs B and C) and in patients complaining of symptoms these may be entirely allayed. Sir Charles Gordon-Watson has described such a case[12] and we have seen others, one of which is mentioned under the heading Symptoms above. Our observations suggest that in all cases the affected part of the bowel is benefited and the progress of the disease delayed. Neither can we have proof that in the stage of established diverticula medical treatment—i e, paraffin, douching, removal of septic foci, and attention to general health, prevents the formation of stercoliths. We have, however, evidence that pouches empty their contents more readily after treatment, and stercolith formation would thereby be retarded if not prevented. In most cases the symptoms disappear as a result of treatment. In our series out of 158 patients with diverticulosis of all stages 87 complained of symptoms. Of these 70 were treated by us, 52 of whom were completely or almost completely relieved, 13 others received much benefit.

When *diverticulitis* is established the lavage is continued for longer, and in some cases permanently, at regular intervals. Enemas of 3–6 oz of warm olive oil are sometimes very useful. It is a great advantage to avoid, if possible, irritation, by regular purges, even a weekly dose of salts. But these must be used if there is a doubt about a sufficient evacuation.

Attention to the general habits of the patient is almost as important as the local treatment of the bowel. One reads, or hears doctors say, that the treatment is this or that. But hardly anyone, certainly no modern man over 30, can be treated entirely out of a book. He is nearly always working, playing, eating, drinking, smoking, or sitting too much, and unless his life be regulated the local measures will not be enough.

It is remarkable how quickly the inflammation may subside in subacute diverticulitis with the above measures. The symptoms may be gone in a week; and we have known a comparison of the radiograms after three weeks show that the lumen was restored almost to normal and the rigid area of bowel wall much lessened.

The patient must be warned about the danger of obstruction. If it threatens, the diagnosis of the degree of occlusion may be difficult. The practical point which has to be decided is whether colostomy shall be performed. The stoppage of diverticulitis can often be relieved even when there is a good deal of abdominal distension and constitutional disturbance. If grave symptoms such as a rising pulse-rate, collapse, and intractable vomiting are not present, and the diagnosis has been made radiologically, then castor oil (with laudanum and hot fomentations if pain is severe) and enemas may be given with confidence. A physical sign of value when improvement begins is the disappearance of resonance on percussion in the left lower quadrant. If, however, it has been found with X rays that there is much dilatation of the bowel above the affected area a colostomy is likely to be needed. But in most cases with continued care, even after severe obstruction, colostomy may be avoided for long periods, or indefinitely. One patient went 11 years after his first attack of obstruction until a colostomy was done; and that would probably not have been needed had he not been abroad and away from close medical supervision. Another had a first attack of obstruction eight years ago. He came under our observation two years later. This patient is still well with regular actions.

Surgical Treatment

Operation for obstruction from diverticulitis, perforation of a pocket, vesicocolic fistula, and suppuration in the bowel wall with involvement of surrounding structures, are necessary procedures at which the surgeon is an opportunist. He does what can be done.

How far can we control the disease so that these operations of despair may be avoided? The surgical treatment of a perforated pocket we cannot expect to avoid. The accident happens and must be dealt with; indeed it occurs when diverticulitis, as above defined, is not present. An operation for obstruction for a gradually closing irremovable infiltrated area, which cannot be otherwise mitigated, is also a necessity. It is better to do it, however, at a time of choice, when regular X ray observations have shown that the channel is narrowing and the bowel above dilating, and before the added dangers of actual obstruction have arrived.

When colostomy has been done the rest given to the collapsed area, aided by douching, may lead to a great degree of recovery. The swelling subsides and the lumen is restored. Sir Berkeley Moynihan has found it possible to close the colostomy again, in selected cases, to the great relief of the patients.

If, however, the case is recognised, adequately treated, and watched, with a barium enema every year for a simple diverticulosis, and every six months for diverticulitis, the severer complications are, in our experience, rare. The people who get into trouble are generally those whose cases have not been diagnosed, or who, after successful treatment, escape medical supervision and give less and less attention to the bowel as time passes.

Radical surgical treatment is sometimes possible. It is true that the disease tends to spread. But in practice hypertrophic inflammatory processes are generally confined to one area of bowel, and if that area can be successfully resected the patient is cured of diverticulitis. This has been done in a number of cases, as Mr Lockhart-Mummery[13] described recently. Gerzowitsch[14] has collected 101 from the literature. Of these 51 were cured, 7 died, and the result in 13 was not recorded. If the area can be radiographically defined, is not too low down, and is reasonably free from involvement of surrounding structures, and if the symptoms persist in spite of careful treatment, and the patient is in good condition otherwise, he may be offered exploration with a view to resection.

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[11] Quart. Jour Med loc cit Brit Med Jour, loc cit

[12] Proc Roy Soc Med, loc cit, p 682

[13] Lockhart Mummery J P Proc Roy Soc Med loc cit, p 691

[14] Gerzowitsch, M Schweiz Med Wochenschr, 1925, vi 124

AN ANALYSIS OF THE CAUSES OF BLINDNESS

AMONG THE PUPILS OF THE SCHOOL FOR THE BLIND, SWISS COTTAGE

BY A HUGH THOMPSON, M D, B CHIR CAMB,
CONSULTING SURGEON TO THE WESTERN OPHTHALMIC HOSPITAL, LONDON

THE London Society for Teaching and Training the Blind has under its supervision about 500 blind individuals of whom, according to their latest report, 84 are between the ages of 5 and 16, all resident school-children at the Swiss Cottage Blind School, 62 pupils between 16 and 20, most of them resident either at the school or at the Girls' Hostel, and 47 adult pupils, besides upwards of 300 workers in shops and at home, who are able, either partially or (with the assistance that they obtain through the Society in accordance with the Blind Persons Act) wholly, to earn their own livelihood For the last seven years, as ophthalmic surgeon to the institution, I have had an opportunity of examining all the pupils and some of the out-workers, and the present paper is an attempt to analyse the causes of their blindness.

Degrees of Blindness

Blindness is a term which needs definition Only a small proportion of these cases were without the power of perceiving a light when held before their eyes (or eye) Most of them could recognise whether a hand held in front of them was moving or not Many of them could count the fingers of a hand held up two or three feet in front of them Some of them could see the largest letter of the ordinary test type at the distance of 6 metres (6/60) A few of them could see better than this

It is well known that the acuity of central vision is not a wholly sufficient test for the presence or absence of blindness The visual field may be so small that even with comparatively good central acuity the patient ought to be considered blind in the economic sense This may occur in glaucoma (which, in children, takes the form of buphthalmos), in optic atrophy, and in retinitis pigmentosa In all three of these, moreover, the disease is, as a rule, slowly but surely progressive, so that even if the patient is not blind at the time of examination he or she is in imminent danger of becoming so, and, in the case of children, it is wise to educate them, bearing in mind that eventuality This last consideration also applies to certain cases of high myopia about which I shall say more later

Classification of Cases under Survey.

The total number examined by me was 255, of whom 150 were males and 105 females, 51 of whom had vision better than 6/60 with full fields, the remainder coming under the definition of blindness recently suggested by the Ministry of Health Except 16 they were all under 25 years of age The following is an analysis of these cases in respect of (1) the causes and (2) the extent of their blindness

1 *Ophthalmia Neonatorum*

57 examined 28 males, 29 females

Vision—No p l	16	Vision—6/60	6
p l	20	Better than 6/60	4
Counting fingers	10	Uncertain	1

It will be seen that the degree of blindness among these cases is very extreme In five of the cases one eye had been excised In two both had been excised In most of them the corneæ were unsightly from a dense whitish opacity In some cases the whole globe was shrunk In some it was bulging There was cataract in many, and practically all had nystagmus

2 *Optic Atrophy*

37 examined 25 males, 12 females

Vision—No p l	7	Vision—6/60	3
p l	19	Better	2
Fingers	5	Uncertain	1

In these cases the outward appearance of the eyes is generally normal except for the pupils which often do not react to light Nystagmus is rare since in most of these cases the patients have had sight and acquired the art of fixation in infancy. The causation was as follows —

1	Congenital syphilis	8
2	Cerebral (one each of dystrophia adiposo genitalis, cerebral abscess, cerebral tumour, oxycephaly, and vascular lesion at birth)	5
3	Familial	5
4	Following disease (one meningitis, one measles and pneumonia)	2
5	Accident (fractured base)	2
6	Uncertain	15

3 *Syphilis*

30 examined · 11 males, 19 females These included (1) interstitial keratitis, with or without choroiditis, 24, (2) choroiditis, without interstitial keratitis, 6 The vision of these cases was better than that of the previous groups

Vision—No p l	1	Vision—6/60	3
p l	1	Better	11
Fingers	14		

Three-quarters of these children were cases of interstitial keratitis, a disease which, though it often causes temporary blindness lasting from three months to two or three years, does not, as a rule, cause permanent blindness The disease, however, is relatively common and the exceptions who become blind are sufficiently numerous to form a notable proportion of the inmates of all blind schools In many cases the interstitial keratitis is complicated by choroiditis, cyclitis, or cataract, which partially accounts for the number of those who become permanently blind On the other hand, it is not infrequent for children whose vision has been given up as hopeless to be admitted to the blind school and improve to some extent in the course of years

4 *Congenital Cataract*

31 examined 20 males, 11 females

Vision—No p l	3	Vision—6/60	7
p l	3	Better	8
Fingers	10		

All these cases, without exception, had been operated on, but many at an age when, nystagmus having already been established, the power of central fixation could not be acquired Probably in some cases blindness might have been prevented by more timely operative treatment Many of these cases had capsule or secondary membrane over the pupil and in three of these it was possible to restore fairly good sight (6/18), and in one other moderate sight (6/60) by needling operations after they had already been admitted to the school as blind In another case where four needling operations had been performed at the age of 15 and an absolutely clear pupil had been obtained the vision was no better than 5/36, nystagmus being present and the eye partially amblyopic Besides nystagmus and thick membrane, complications in these cases included microphthalmos, high myopia, cyclitis, and detached retina

5 *Congenital Cases other than Cataract*

34 examined 20 males, 14 females

Vision—No p l	2	Vision—6/60	5
p l	7	Better	6
Fingers	14		

The conditions found were as follows —

—	Male	Female	Total
Albinism	6	5	11
Dislocated lens with high myopia	2	—	2
Congenital nystagmus without discoverable fundus change	7	3	10
Microphthalmos	2	1	3
Aniridia	2	3	5
Macular coloboma	1	1	2
Dense capsular pupillary membrane complicated with congenital syphilis	—	1	1

In this group, as in the preceding one, the preponderance of male over female cases will be noted Albinism, as is well known is a family disease Out of the six boys in the school blind from this condition there are two pairs of brothers Practically all of these congenital cases have nystagmus Ten of them I have put down as congenital nystagmus without discoverable fundus disease sufficient to cause blindness though in at any rate one of these there were visible choroidal changes The examination of the macula, however, in these cases is peculiarly difficult This also applied to cases of aniridia, all of whom had nystagmus Absence of the iris in itself would not cause blindness, and the presumption is that all cases of albinism aniridia and congenital nystagmus which are severe enough to cause blindness do so on account of some defect in the macula which may or may not be visible to the ophthalmoscope

6 *Disease*

37 examined 25 males, 12 females

I will subdivide this group (1) Retinitis pigmentosa, 11 cases of whom all but one were males This proportion is an exaggeration of that generally found Nettleship puts the proportion of males in affected families as only about 60 per cent (Trans Oph Soc, 1909) A definite family history was obtained in six of my cases

Vision—No p l	1	Vision—6/60	3
p l	3	Better	1
Fingers	3		

In addition to the bad central vision, the contraction of the fields and the inevitably progressive nature of the disease are such that even those whose central acuity in childhood is fairly good should certainly be educated in a blind school

(2) Keratitis, iritis, cyclitis, choroiditis, and panophthalmitis 19 cases, 10 males and 9 females

Vision—No p l	6	Vision—6/60	2
p l	3	Uncertain	1
Fingers	7		

In most of these cases the causation was uncertain Congenital syphilis may account for some Measles was the cause assigned in four cases, the blindness having followed the disease at the ages respectively of 2 years, 15 months, 2 years, and 3 years In one of these cases both eyes were shrunk In another both had been excised There was one case of panophthalmitis following scarlet fever at the age of 14 months, and one case of iridocyclitis following influenza One case of keratitis was due to trichiasis

(3) Besides the above, the group includes three cases of buphthalmos, one of cerebral blindness without optic atrophy, two of double detached retina, and one in which both eyes had been excised without obtainable history None of these cases had any vision better than counting fingers

7 *Accident*

Eight cases, all males six of them cases of sympathetic ophthalmia, in none of which was the vision better than counting fingers The other cases were one in which an accident occurred to the only good eye at the age of 8, the other one having been blinded by cyclitis at the age of 2, the other in which the first eye was blinded by an accident at the age of 7, and the second eye by another accident at the age of 15, both having been excised These two cases are exceptional, and illustrate the chief value of the possession of two eyes

8 *Myopia*

21 cases 13 males 8 females

Vision—No p l	1	Vision—Better	10
Fingers	4	Too young to take vision	4
6 60	2		

As a rule these cases are much more suitable for the myope classes such as have been established by the L C C than for the blind school The great majority of high myopes never become blind, but there are cases where the damage to the macular region has already reached such an extent, even in childhood, and there are others where even without this being obvious the degree of myopia in relation to the age of the child is so high, that it is on the whole wiser, in view of the child's probable future, that he should be brought up in a blind school Of those whose corrected central acuity was no better than 6/60 five had macular choroiditis and one double detached retina This last, however, was an adult pupil of 42, and the case illustrates one of the dangers to which these children are liable when they get older. Most of them when young have healthy fundi. Unfortunately in country districts and in most towns there is no "myopic class" available, and the question has to be decided, not what is best for the child but what is second best, an ordinary school or a blind school It thus happens that pressure is often brought on the authorities of the blind schools to admit children to be trained in a way which is not the ideal one for them

The Preventive Point of View

From the point of view of prevention, it is worth while to classify these cases according to their causation in a somewhat more general way For this purpose I will exclude all those whose vision is better than 6/60 except in the three progressive diseases already referred to This leaves 213 cases, which I will classify under the following heads

1 Caused by venereal disease in the parents, 80, of which—

Ophthalmia neonatorum	53
Syphilitic keratitis and choroiditis	19
Syphilitic optic atrophy	8

This is probably an understatement as far as syphilis is concerned It is probable that some of the cases of optic atrophy of uncertain causation and some of the cases of cyclitis were due to syphilis.

With regard to ophthalmia neonatorum, it may be objected that not all cases of this disease are due to gonorrhœa This, of course, is perfectly true. According to the report on blindness in Glasgow, published in 1926, and compiled by Drs Freeland Fergus and J L Halliday, the number of cases of ophthalmia neonatorum notified during the years 1912–24 inclusive was 7687 Of these, swabs were taken in 1791 cases, of which only 31 3 per cent were positive for the gonococcus On the other hand the number of those blinded by the disease—i e, with both eyes blind—out of 3501 non-gonococcal cases was *none*, whereas out of the 1265 gonococcal cases it was six It may therefore be fairly assumed that when a patient is blinded in both eyes the gonococcus is responsible, and this applies to all the cases at the blind school

The possibility of prevention lies in (1) the reduction among the general population of the habit of promiscuous sexual intercourse; (2) the prophylactic treatment of ophthalmia of the new-born by means of the more rigid enforcement of notification by midwives, greater facilities for immediate skilled treatment of the disease without loss of time and possibly the more general use of prophylactic drops of nitrate of silver or some substitute by midwives (3) the increase of the systematic treatment of venereal disease which has already been established, (4) a wider knowledge among the general population of the facts

2 Cases caused by congenital and inherited conditions other than syphilis, 66

Cataract	25	Family choroiditis	2
Other congenital conditions	25	Family optic atrophy	3
		Retinitis pigmentosa	11

As regards prevention, I cannot help noticing the number of cases of congenital cataract who, in spite of having been operated on, remain blind or partially blind Most of these cases have more or less capsule obstructing the pupil, but some of them have a good clear pupil and yet they are blind They practically all have nystagmus, and this points to the reason why even with a good pupil and a convex lens in place of the crystalline which has been removed they still see so badly Operative treatment is often undertaken too late after the period of infancy during which alone it is possible to attain the power of correct central fixation When once the bad habit of nystagmus has been acquired there is little chance of good vision ever being restored Undoubtedly for these cases prevention of a certain amount of blindness could be attained if competent ophthalmic treatment was undertaken sufficiently early in life

3 Cases caused by non-venereal disease other than family and inherited, including optic atrophy not due to these causes and also including myopia, 57

With regard to prevention, there is little to be said. Myopia which is so malignant as to cause blindness in early life can hardly be prevented Prevention of blindness in later life by an appropriate regime for youthful myopes is another matter.

Measles as a cause of blindness is emphasised in the Glasgow report when the percentage, based on the accounts given by the parents, is put down as 2 9 Our cases estimated in the same way come to 5, or 2 3 per cent

4 *Accident* —10 cases, including two optic atrophy cases As to the others, I have been struck with the fact that the air-gun is a most dangerous toy for boys Accidents, however, do not happen to both eyes at once In nearly all these cases blindness was due to sympathetic ophthalmia, and as, with timely hospital treatment, this disease is becoming exceedingly rare, we may hope that in the future these cases may almost be reduced to nil

Reducing these causes of blindness to percentages we get—

Venereal disease	80	or	37 6	per cent
Inherited and family disease	66	,,	31 0	,,
Non inherited and non venereal disease	57	,,	26 7	,,
Accident	10	,,	4 7	,,

Clinical and Laboratory Notes.

A CASE OF COR TRILOCULARE BIATRIA

BY EDITH F W MCCREA, M B DUB , F R C S IREL ,

PHYSICIAN TO THE MANCHESTER BABIES' HOSPITAL

THE following instance of cardiac malformation appears worthy of record

A female infant, aged ten weeks, was admitted to hospital on Jan 28th, 1926, with a history of dyspepsia She was the only child of her parents, and was born at full time, there was no family history of importance

On admission she was a very small, wasted child, weighing 5 lb 8 oz., cyanosis was marked and there was a loud systolic murmur, audible all over the præcordia and propagated into the left axillary and scapular regions The Wassermann and von Pirquet reactions were negative

The infant suffered from a mild form of chronic dyspepsia, but the clinical picture was primarily that of a cardiac lesion The cyanosis varied in degree from time to time, but was always present the appetite was poor and the child was extremely listless For six weeks her general condition did not materially alter; then a rapid deterioration developed and death occurred within a few days

Post-mortem examination revealed an interesting condition of the heart On opening the pericardium the heart appeared at first glance to be normal in size and appearance But on tracing the vessel, which seemed from its site of origin to be the pulmonary artery, it proved to be the aorta, which gave off its usual branches. Lying posteriorly to this vessel in the normal position of the aorta was the pulmonary artery, the diameter of which was about one-third that of the aorta

The ductus arteriosus was not patent, the right and left atria were normal except for the presence of a patent foramen ovale and the atrioventricular valves appeared to be normal and competent A single ventricle was present, from which both aorta and pulmonary artery originated. The interventricular septum was deficient and no portion of it could be identified although two large fleshy bands partially subdivided the cavity The aortic orifice lay at the site usually occupied by that of the pulmonary artery, while the latter vessel with its thin walls lay posteriorly and to the left in the normal position of the aorta, each orifice possessed three semilunar valves

The principal defect in this heart was apparently a total deficiency of the interventricular septum, together with malformation of the proximal bulbar septum which resulted in transposition of the great vessels In Vierordt's classification, quoted by Abbott in Osler and McCrae's "System of Medicine" (vol iv , p 370), this case would be grouped under the heading of "Cor Triloculare Biatria" with "partial transposition, in which both great vessels arise transposed from a common ventricle"

I reported another example of cor triloculare biatria in 1923[1] in an infant aged 3 months This heart apparently resembled those quoted by Holmes (see Abbott), and also one described by Keith, in that an anomalous septum was present; there was however, no transposition of the great vessels True cor triloculare biatria is stated to be an extremely rare condition but I have seen two cases within three years

I am indebted to Dr. Florence Robinson for permission to publish this case

A CASE OF SQUAMOUS CELLED EPITHELIOMA OF THE BRONCHUS

ILLUSTRATING LYMPHATIC PERMEATION

BY D. M BADEN EVANS, M B , M R C.P. LOND ,

RESIDENT MEDICAL OFFICER, BOLINGBROKE HOSPITAL

THE following case of epithelioma of the right bronchus is of interest in view of the widespread metastases, unusual in this type of tumour, the clearly defined mode of spread, and the deceptive nature of its clinical harbinger; also on account of the squamous type of cell seen in a tumour arising from a tube, normally lined by columnar epithelium.

The patient, a feebly nourished man of 54, came up complaining of a "boil" on the right side of the back. On inspection the tumour was of the size and shape of a split walnut, situated opposite the second dorsal spine It had been incised three weeks previously, but had failed to heal The mass was indurated and fungating, and hard glands were palpable in both axillæ and supraclavicular areas There was also a small enlargement of the lower end of the left ulna

Examination of the chest revealed râles and rhonchi all over, which was consistent with a history of several years of chronic bronchitis But a little exaggerated dullness over the root of the right lung prompted the taking of an X ray photograph, and this strongly suggested the presence of a new growth

The tumour on the back was excised under local anæsthesia and was found to have no deep attachments whatsoever A gland from each axilla was also removed for section All three were shown to be involved by squamous-celled epithelioma There was no keratinisation however, and the cell-nests of cutaneous tumours were absent Three weeks later the patient's "bronchitis" became worse, expectoration became profuse, and later hæmorrhagic, the temperature remitted between 100° and 103° F., and cyanosis with œdema of the neck and face developed In five days the patient died.

Autopsy revealed a large growth of the right bronchus firmly adherent to the spinal column from which it could be separated only with the scalpel. There were secondaries in the mediastinal glands, the cœliac glands, the glands along the curvatures of the stomach, there was one small growth in the liver, and one in the periosteum at the lower end of the left ulna. From its size, age, and involvement of surrounding structures the primary growth was obviously in the right bronchus The squamous type of cell must have evolved from the columnar by a process of metaplasia consequent on prolonged inflammatory irritation There were elsewhere abundant evidences of chronic bronchitis and bronchiectasis with atrophy of the lining of the respiratory tubes and thickening around

Sections were made from all the secondary deposits which were found to be involved by the same type of growth Their situation admirably illustrates the centrifugal manner of spread by the lymphatics · (a) To the back along the lymphatics accompanying the dorsal branches of the intercostal vessels (b) Forwards to the mediastinal glands (c) Upwards in along the thoracic duct, and tributaries of the right lymphatic duct, to the supraclavicular glands, and thence to the axillary glands (d) Downwards, along the thoracic duct to the cœliac glands and those of the stomach

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[1] Willock THE LANCET, 1923, ii, 1399

The small deposits in the liver and ulnar periosteum were probably the result of spread by the blood stream from emboli entering by the large lymph trunks If the metastasis in the ulna were due to permeation from the axilla, it would have to be assumed that perilymphatic fibrosis had prevailed in the interspace

My thanks are due to Mr V Zachary Cope for permission to publish this case

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A NOTE ON
GIDDINESS IN NEURASTHENIA

By Hector M Walker, M D Glasg

Vertigo is a symptom commonly met with in practice, and it is usually very persistent and difficult to deal with It may arise in many and varying conditions, and a difficulty that it presents is that it is rarely easy to come to a clear understanding of what the patient means by giddiness The giddiness complained of by the neurasthenic appears to be mainly an uncertainty of himself in relation to his surroundings and a feeling that he may fall at any time The so-called gastric vertigo is usually of the same nature, but there is often a more definite feeling of subjective or objective movement than in the neurotic type

Vertigo in a Boy Relieved by Irrigation of the Meatus

Irrigation of the external meatus of the ear with hot or cold water normally produces a certain train of events, evidenced by vertigo, a tendency to fall to one side, nystagmus, and past-pointing The vertigo, nystagmus, past-pointing, and falling occur in a definite direction, and the direction differs when hot water is used from that when cold is used, and the response from the left ear is in the opposite direction to that of the right This reaction was described by Barány, and it occurred to me to use it to gain some information on the symptom of vertigo in cases in which I had been unable to find an organic cause

A boy of 11 years had suffered for eight months from very severe headaches of a migrainous type coming on at intervals of two to three weeks The headache was always ushered by a subjective sense of giddiness which would last for 10–15 minutes and was invariably followed by a headache lasting for several hours The vertigo was not associated with nystagmus, past-pointing, or a staggering gait, the face turned pale but he did not vomit The absence of these objective signs suggested that there was no disease of the labyrinths

At one time when I happened to see him at the beginning of an attack I decided to test the vestibular reaction, and also to see what the effect of a powerful physiological stimulus to vertigo would be I therefore syringed his left ear with cold water and immediately he developed a very marked nystagmus, felt extremely giddy, and vomited The pallor gave way to a flush on the cheeks In about a minute the vertigo left him and the headache which always followed the vertigo did not develop

The disturbance in this case evidently started with an aberrant flow of neural energy in the vestibular nucleus giving rise to the sense of vertigo, through the cerebellar connexions of the nucleus The headache which followed the vertigo was probably originated by an overflow into the adjacent trigeminal nucleus, the outlet through the trigeminal nucleus being an easier path, as it is one normally concerned with somatic sensation By giving a stimulus sufficiently powerful to overcome the aberrant flow and to act as a prepotent stimulus, a normal reaction is provoked, with a normal outlet preventing overflow into the trigeminal nucleus

Five Similar Cases

Five other cases were of neurasthenics, who complained of giddiness This giddiness, so far as I could make out consisted of an uncertainty of themselves in relation to their surroundings, and a feeling that they might fall at any time if they did not use every means to keep a strict hold on themselves I had the idea that this symptom was due in part to a deficient action of the proprioceptive system through the state of nervous exhaustion, and I decided to try the effect of vestibular stimulation

In a man of 36, who complained of persistent giddiness the reaction was delayed for two minutes The vertigo was not very severe, and the reaction was normal in direction, but the nystagmus was rather sluggish

The second patient was an intelligent man of 35 I placed him in a chair facing an open window and irrigated his ear with cold water This quickly produced a normal reaction with very marked vertigo and nystagmus He said that he felt much better after this and that he felt more confidence on his way home than he had had for six months I repeated the process twice and the condition cleared up completely A year later he returned with the request to have it done again as he was beginning to have a return of the giddiness, and after one irrigation he said that it had gone

The influence of the vertigo stimulus probably acted partly by re-establishing his confidence when he saw what real vertigo meant The principal effect I think, depended upon the replacement of the aberrant flow of neural energy in the nucleus by a prepotent stimulus which took a normal path

The next case, that of a man of 30, was of special interest, for although the giddiness disappeared after two irrigations which gave a normal reaction, it was replaced by a headache strictly limited to the right side—the side that I had irrigated For five weeks he had occasional headaches, but they cleared up as his general condition improved The powerful stimulus caused a normal flow of neural energy in the vestibular nucleus, and the aberrant excitation, instead of being overcome as in the case of the boy, was here directed into the trigeminal nucleus The stimulus which affecting the vestibular nucleus will cause vertigo in the trigeminal nucleus may cause headache, and in the vagal nucleus may cause vomiting The gastric vertigo is probably a reversal of this process, the stimulation referred back to the vagus nucleus overflowing into the vestibular nucleus The headache sometimes associated with this disturbance may be a like involvement of the trigeminal nucleus

The condition of the other two patients was also improved by the stimulation, although one, who had complained of giddiness for nine months, required irrigation six times at intervals of five days He also returned some months later with a request to have the treatment repeated

The vestibular nucleus and the cerebellum, which is really in phylogeny an outgrowth and development of the part of the vestibular system known in fishes, as the acustico-lateral area, are the head ganglia of the proprioceptive system It is easy to understand that even a slight functional disorder of this system, which normally acts automatically will call into action a continual slight activity of a conscious element for postural control through the cortico-spinal tracts This must necessarily absorb a considerable amount of nervous energy, and it is not surprising that such cases have marked symptoms of neurasthenia which resist treatment

I believe that this method throws some light upon a certain type of giddiness, although it is obvious that in these cases there is not a true vertigo The few cases that I have examined were carefully selected as it was this particular symptom, occurring in neurasthenia, that I wished to study

Medical Societies.

ROYAL SOCIETY OF MEDICINE

SECTION OF SURGERY: SUBSECTION OF PROCTOLOGY

A MEETING of this Subsection was held on May 11th, Mr. J. P. LOCKHART-MUMMERY, the President, in the chair.

Mr. W. E. MILES opened a discussion on

COLOSTOMY

He began by describing the lumbar colostomy of preantiseptic days, when the surgeons were afraid to approach the bowel intraperitoneally. The chief defect of this measure was that the stoma in the colon was lateral and did not stop the passage of fæces beyond it. It had one virtue—protrusion of the mucosa never occurred. Now that resection with anastomosis could be performed, the operation of colostomy was needed only for inoperable carcinoma of the rectum or pelvic colon; lumbar colostomy had been gradually superseded by sigmoidostomy. At first this was made a little above the left Poupart's ligament and at about the middle of the pelvic loop, and an opening was made in the parietes large enough to put the hand in for investigation. The result was that the spur receded so that the opening became a lateral one with all the defects of the lumbar colostomy combined with considerable protrusion. Later Mr. Harrison Cripps had pointed out that protrusion could be prevented by making the opening high up in the pelvic colon. Much controversy had followed; the advocates of the low opening said that it was necessary to preserve a natural reservoir which more or less controlled defæcation. They forgot that, whereas Nature provided a loop for control she had also provided an efficient lock in the form of the sphincter. Mr. Miles had no doubt that Harrison Cripps was right about the site of election. The essential feature of a colostomy should be that it effectively prevented the contents of the bowel from passing beyond the stoma into the loop below. For this the permanence of the spur was essential. If the mesentery were short, congenitally or as a result of carcinomatous infiltration, it was impossible to deliver a loop long enough to make a good spur, and directly the rod was removed the spur would recede on the slightest tension from within.

Some had thought that peristalsis had something to do with recession of the spur and had therefore divided the bowel completely, making a terminal colostomy. In cases for which colostomy was now performed, however, the distal portion could not be occluded because of discharges from the growth. Mr. Miles's objection to this device was that division of the bowel created a weak spot between the two openings and sometimes large hernial sacs appeared between them. Another modification was to make the colostomy opening through the outer border of the rectus muscle. This gave good support but could only be done where there was sufficient length of loop of the pelvic colon. It did not, in fact, matter what method was adopted so long as the colostomy was effective.

Indications

Cæcostomy was a lateral opening, a temporary measure only, for evacuation, washing out, or forming a safety-valve. Transverse colostomy was a substitute for sigmoidostomy when the latter was impossible. The indications were carcinoma of the rectum or lower sigmoid, to give rest in inflammatory conditions, such as diverticulitis, to overcome obstruction in cases of compression from without, for congenital defects and for relief of fistulæ or of irremediable incontinence after operations for fistula. Mr. Miles did the operation one-third along the line from the anterior superior spine to the umbilicus, and he chose that part of the pelvic colon which was best and not where chance dictated. Most of the patients were elderly with some visceroptosis, and the colon was usually bound down by altered peritoneal attachments, so the abdomen should be opened down the middle line and the gut mobilised if necessary. A stab incision was then made in the parietes and a circle of skin of about 1 inch in diameter removed so that when the bowel was extruded it adhered to the aponeurosis of the external oblique thus preventing recession. A ligature was then introduced through the mesentery, passing first close to the proximal end and then to the distal, to anchor it to the skin. A loop of silkworm-gut was drawn tightly enough to obstruct venous return, but not arterial flow, so that a solid œdema was produced in the spur, which looked like a tomato and was shaped like a mushroom. The spur so produced was durable; he had recently seen a case done in 1903. Much depended on careful after-treatment: daily washing out of the bowel, and the use of a cap as a protector; a bag was the worst possible thing, as it produced a negative pressure which led to protrusion.

Mr. W. B. GABRIEL said that a permanent colostomy was now regarded as an essential part of the operation for carcinoma recti, and it could be one of the most satisfactory operations in surgery. It must not be regarded as a crippling process; patients were able to take part in their usual social lives and pursuits as before. His remarks would deal with colostomy of the pelvic colon with the bowel in continuity, and the indications for this measure were: 1. Carcinoma of the rectum, whether operable or inoperable. Nearly every case benefited if the operation were done in good time; failure might be due to faulty technique or inability of the patient to adapt to the new conditions. 2. Fibrous stricture too extensive or too high for dilatation. 3. Diverticulitis, causing obstruction or vesico-colic fistula. 4. Acute spreading ulceration—a very rare indication. 5. Recent injuries of the rectum, such as gunshot wounds, where it was a useful adjunct to local drainage and older injuries where extensive plastic operations were required. 6. Compression by extrarectal tumours, such as pelvic sarcoma and chondroma or, more commonly, carcinoma of the cervix uteri.

The Rectus Incision

Mr. Gabriel's technique, and that commonly followed at St. Mark's Hospital, began with a vertical incision 1½ inches long to the left of the midline, splitting the fibres of the rectus abdominis. The advantages of this method were that a general exploration could easily be done, that it was less likely to produce ventral hernia, and that the transverse colon was available if required. He had tried fancy incisions, such as those designed to give a bridge of skin between the stomata, and had found no advantage in them. A glass rod was better for fixing the bowel than a stitch, which was liable to cut out. It should be passed through the mesentery ½ inch to 1 inch from the edge of the bowel and must be left in for 14 days at least. Nothing but catgut was used for the abdominal wall, and all sutures were interrupted. Tension sutures were put through the skin and anterior sheath. The difficulty of bringing the bowel to the surface was generally met by thorough division of adhesions.

Complications and Their Prevention

He quoted figures from St. Mark's Hospital where, out of 259 colostomies for inoperable carcinoma of the rectum, the immediate mortality had been 13.5 per cent., 20 cases having died of heart failure, exhaustion, or pulmonary complications, four of peritonitis, one from strangulation of a loop of small intestine between the colostomy and the abdominal wall, one each from renal failure, coma, and hæmorrhage from the proximal end, while four more remained distended without obvious reason. Later complications were stenosis always at skin-level; retraction of the spur, which must be actively treated by dissecting out and refixing; proximal or distal prolapse due to too large-growth. Their situation admirably illustrates the centrifugal manner of spread by the lymphatics: (a) To the back along the lymphatics accompanying the dorsal branches of the intercostal vessels. (b) Forwards to the mediastinal glands. (c) Upwards in along the thoracic duct and tributaries of the right lymphatic duct to the supraclavicular glands; and thence to the axillary glands. (d) Downwards along the thoracic duct to the cœliac glands and those of the stomach.

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By HECTOR M. WALKER, M.D. GLASG.

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Vertigo in a Boy Relieved by Irrigation of the Meatus.

Irrigation of the external meatus of the ear with hot or cold water normally produces a certain train of symptoms, evidenced by vertigo, a tendency to fall to one side, nystagmus, and past-pointing. The vertigo, nystagmus, past-pointing, and falling occur in a definite direction, and the direction differs when hot water is used from that when cold is used, and the response from the left ear is in the opposite direction to that of the right. This reaction was described by Barany, and it occurred to me to use it to gain some information on the symptom of vertigo in cases in which I had been unable to find an organic cause.

A boy of 11 years had suffered for eight months from very severe headaches of a migrainous type coming on at intervals of two to three weeks. The headache was always ushered in by a subjective sense of giddiness which would last for 10–15 minutes and was invariably followed by a headache lasting for several hours. The vertigo was not associated with nystagmus, past-pointing, or a staggering gait; the face turned pale but he did not vomit. The absence of these objective signs suggested that there was no disease of the labyrinths.

At one time when I happened to see him at the beginning of an attack I decided to test the vestibular reaction, and also to see what the effect of a powerful physiological stimulus to vertigo would be. I therefore syringed his left ear with cold water and immediately he developed a very marked nystagmus, felt extremely giddy, and vomited. The pallor gave way to a flush on the cheeks. In about a minute the vertigo left him and the headache which always followed the vertigo did not develop.

The disturbance in this case evidently started with an aberrant flow of neural energy in the vestibular nucleus, giving rise to the sense of vertigo, through the cerebellar connexions of the nucleus. The headache which followed the vertigo was probably occasioned by an overflow into the adjacent trigeminal nucleus, the outlet through the trigeminal nucleus being an easier path as it is one normally concerned with somatic sensation. By giving a stimulus sufficiently powerful to overcome the aberrant flow and to act as a prepotent stimulus, a normal reaction is provoked, with a normal outlet preventing overflow into the trigeminal nucleus.

Five Similar Cases.

Five other cases were of neurasthenics who complained of giddiness. This giddiness, so far as I could make out, consisted of an uncertainty of themselves in relation to their surroundings, and a feeling that they might fall at any time if they did not use every means to keep a strict hold on themselves. I had the idea that this symptom was due in part to a deficient action of the proprioceptive system through the state of nervous exhaustion, and I decided to try the effect of vestibular stimulation.

In a man of 26, who complained of persistent giddiness, the reaction was delayed for two minutes. The vertigo was not very severe, and the reaction was normal in direction but the nystagmus was rather sluggish.

The second patient was an intelligent man of 35. I placed him in a chair facing an open window and irrigated his ear with cold water. This quickly produced a normal reaction with very marked vertigo and nystagmus. He said that he felt much better after this and that he felt more confidence on his way home than he had had for six months. I repeated the process twice and the condition cleared up completely. A year later he returned with the request to have it done again as he was beginning to have a return of the giddiness, and after one irrigation he said that it had gone.

The influence of the vertigo stimulus probably acted partly by re-establishing his confidence when he saw what real vertigo meant. The principal effect, I think, depended upon the replacement of the aberrant flow of neural energy in the nucleus by a prepotent stimulus which took a normal path.

The next case, that of a man of 30, was of special interest, for although the giddiness disappeared after two irrigations which gave a normal reaction, it was replaced by a headache strictly limited to the right side—the side that I had irrigated. For five weeks he had occasional headaches, but they cleared up as his general condition improved. The powerful stimulus caused a normal flow of neural energy in the vestibular nucleus, and the aberrant excitation, instead of being overcome as in the case of the boy, was here directed into the trigeminal nucleus. The stimulus which, affecting the vestibular nucleus will cause vertigo, in the trigeminal nucleus may cause headache, and in the vagal nucleus may cause vomiting. The gastric vertigo is probably a reversal of this process, the stimulation referred back to the vagus nucleus overflowing into the vestibular nucleus. The headache sometimes associated with this disturbance may be a like involvement of the trigeminal nucleus.

The condition of the other two patients was also improved by the stimulation, although one, who had complained of giddiness for nine months, required irrigation six times at intervals of five days. He also returned some months later with a request to have the treatment repeated.

The vestibular nucleus and the cerebellum, which is really in phylogeny an outgrowth and development of the part of the vestibular system known in fishes as the acustico-lateral area, are the head ganglia of the proprioceptive system. It is easy to understand that even a slight functional disorder of this system, which normally acts automatically, will call into action a continual slight activity of the conscious element for postural control through the cortico-spinal tracts. This must necessarily absorb a considerable amount of nervous energy, and it is not surprising that such cases have marked symptoms of neurasthenia which resist treatment.

I believe that this method throws some light upon a certain type of giddiness, although it is obvious that in these cases there is not a true vertigo. The few cases that I have examined were carefully selected as it was this particular symptom, occurring in neurasthenia, that I wished to study.

ROYAL SOCIETY OF MEDICINE: CLINICAL SECTION.

A MEETING of this Section was held on May 13th Sir HERBERT WATERHOUSE, the President, in the chair

Mr PHILIP TURNER showed a case of

Gumma of Liver.

The patient was a man aged 34, who had been admitted to hospital suffering acute abdominal pain He was said to have had right iliac and hypogastric pain for six years, particularly after taking food On the day of admission the symptom was specially acute, with rigidity of the upper abdomen and marked tenderness, and the condition was attributed to perforated gastric ulcer Yet both temperature and pulse-rate were normal.

Mr. Turner explained that he divided acute abdominal cases into (1) emergencies—i e. those demanding immediate or very early operation and (2) urgencies, those needing attention without delay. The present case he had placed in the second category.

In 24 hours the tenderness had become much less, and the pulse-rate had not risen, while the rigidity had passed off There was a large tumour in the epigastric region and it was resonant Regarding it as a leaking gastric ulcer with a localised abscess, he operated four days after admission he found a tumour the size of a fist in the left lobe of the liver, close to the midline, and a similar lump on the right side near the neck of the gall-bladder A portion removed was gummatous Then the man had admitted he had had syphilis ten years ago, and his Wassermann was found to be strongly positive Injections of novarsenobenzol had already reduced the lump to half its former size

Mr Turner thought the acuteness of the symptoms must have been due to perihepatitis Resonance had often proved a deceptive abdominal sign The lower part of the abdomen was normal

Mr Turner also showed a case of

Fractured Patella Wired in 1889

A woman, aged 60, was admitted for a painful hammer-toe, which was treated surgically A scar about the knee of the opposite side was noticed, and the patient said that Sir Henry House had wired her patella in 1889. The notes of that date showed that three months before her admission she fell and fractured the left patella, and it was put into splints for six weeks Then suddenly it broke again, and Sir Henry House operated under carbolic spray, and kept the limb immobile for seven weeks

A skiagram, said Mr Turner showed the wire still in position. there was perfect bony union with no more arthritis on this side than on the other, and no more than was usual at her age The function of the knee was perfect

Dr C F EAST showed a woman, aged 34, with

Facial Hemiatrophy and Persistent Hiccup

The hemiatrophy had began at 14 years of age, and there were now well-marked changes in all the tissues on the right side of the face and head That side of the tongue was also small and the opening of Stenson s duct could not be seen. The duration of the hiccup was about 13 years it was provoked by emotion and exertion and he regarded it as a form of tic She had considerable periods of freedom from hiccup and the breathing exercises she had been having seemed to have given benefit

Dr L S BURRELL suggested that if the condition was unilateral some good might be done by paralysing the controlling nerve —Dr PARKES WEBER said he considered that if this was a real tic no operation should be attempted especially as improvement was being effected by the breathing exercises —Mr E G SLESINGER disagreed with Dr Weber s implication that because a lesion was functional not organic, it should not be treated by surgery The object of any treatment whether medical or surgical, was to get the patient well in the shortest time

Dr. EAST. in reply said that in a similar case Magnus had found interstitial neuritis of the trigeminal ganglion and of the nerve on the same side of the face.

Mr SLESINGER showed a man. aged 32, with

Arteriovenous Aneurysm

The patient received a bullet wound in the right shoulder in 1918, and in the following year Mr Slesinger saw him because of an arteriovenous aneurysm of the right subclavian. The only complaint he had—and this his wife shared—was that the noise of the aneurysm kept them awake at night. Latterly, however, there had been attacks of pain over the heart and shortness of breath. Skiagrams showed the bullet in the cardiac muscle, probably in front of the intraventricular septum. There was no disability in either arm or hand He told the man he would remove the bullet if it seemed to be moving or interfering with conductivity. Being embedded in a continually contracting organ he thought it would be sure to move

Dr. C WORSTER-DROUGHT brought a man, aged 40. with

Spastic Paresis of One Leg

The complaint was of difficulty in walking owing to weakness of the right leg The right leg was found to be somewhat spastic, with slight general muscular atrophy and weakness. Sensation and coördination were normal Nothing unusual appeared in a skiagram of the spine. The Wassermann reaction in both blood and cerebro-spinal fluid was negative. and the latter fluid appeared normal. There was no history of a previous infecting condition. The illness came on like an ordinary spinal myalgia.

Dr DAVID KRESTIN showed a man, aged 49 who had an

Aneurysm of the Innominate Artery,

which later disappeared

Until seven months before he came under observation in February, 1926, he had been in good health. Then he began to get great pain in the back of the head and the neck. Four months later this improved, but he had a similar pain in the right shoulder and axilla, and the upper part of the anterior chest wall on the right side and the right arm seemed swollen. Six weeks later a swelling the size of a damson appeared just above the right clavicle. At this time he lost his voice and became breathless; he also began to cough. A week before admission to hospital the swelling rapidly increased and became painful. He had gonorrhœa 20 years ago, also what was said to be a soft chancre, which was cauterised. His present inspiratory stridor was well heard The swelling at the lower end of the sternomastoid was the size of a tennis ball and showed expansile pulsation. The second aortic sound was accentuated The man refused any form of treatment and left hospital. Within three months of leaving the swelling entirely disappeared, the general condition improved, and he had since remained at work, without having had any treatment. Nothing could now be felt except an indefinite thickening at the root of the neck, the voice was normal. and both cords moved well. A radiogram of the chest showed dilatation of the ascending arch of the aorta, extending to the innominate artery The Wassermann reaction was strongly positive, and there was no history of trauma.

Dr Krestin suggested that a somewhat acute process had occurred in the wall of the vessel. that blood had exuded into its sheath, so causing a false aneurysm. and that most of the blood had subsequently been absorbed the remainder. after clotting, becoming organised

Dr. V S HODSON said that he had seen a case of aneurysm of the ascending arch of the aorta which seemed likely to burst Following large doses of iodide there was a distinct reduction in the size of the swelling and in a few days all signs of it had disappeared

Mr. ST J D BUXTON showed a case of

Exophthalmos Cured by Ligation of the Carotid

The patient was a woman aged 49, who developed exophthalmos after a street accident. A month after the injury she had diplopia, for which glasses were supplied. Three months later the left eye was proptosed and was slightly pulsating and the conjunctiva was œdematous. With the stethoscope a loud murmur was heard above the orbit, especially over the frontal sinus; this sound ceased when pressure was applied to the common carotid artery. Mr. Buxton operated last February and ligated the left common carotid artery. After this the proptosis gradually subsided, and ocular movements and vision became normal. The patient now had no complaint an opening in the parietes This should be prevented by getting the opening snug round the extruded gut; when established it was best treated by a belt Another late complication was ventral hernia, which no technique could entirely exclude, but the left rectus operation gave better results than the left oblique, and the use of large cups certainly encouraged herniæ Yet another complication was the extension of the cancer to the abdominal wall, owing to a colostomy being made too close to the primary growth If there were not enough loop a transverse colostomy should be done The intestine should not be opened until 48 hours after operation, and with turpentine enemata and paraffin the opening could sometimes be postponed for 7 to 12 days with great advantage The opening should be done with a Paquelin cautery If there was redundant bowel outside it should be trimmed after the fourteenth day under local anæsthesia The daily routine should be a wash-out with 1 to 2 pints of soapy water passed in from a funnel through a rectal tube into the proximal opening, the distal loop should be washed through to the anus if carcinoma were present Patients did very well, they had no sepsis and no irregular actions No cup was needed, the only dressing was a thin piece of cotton-wool, a flat celluloid plate, and a simple corset Patients had to avoid green vegetables, currants, raisins, and sometimes beer and stout, but they had to experiment for themselves and find out what caused diarrhœa

Discussion

Sir C **GORDON-WATSON** said it was time somebody put it on record that colostomy was not the dreadful operation it was supposed to be by the profession and the public If a carcinoma of the rectum was inoperable he always advised colostomy, whatever the condition The patient was more comfortable and healthier after it, and lived longer A proper colostomy properly performed and properly managed was one of the most satisfactory operations of surgery, and after it patients could carry out their work in any walk of life He instanced the driver of a locomotive on the Great Western Railway He believed in a rectus incision close to the umbilicus, and not far from the midline A very important point was to push aside the intercostal nerves, as paralysis of the rectus meant bulging and prolapse He sutured the posterior to the anterior sheath as soon as he had split the muscle, for this limited any bleeding from the deep epigastric vessels or any sepsis that might occur It also prevented the bowel from coming into contact with the muscle where poor adhesion was formed He was a great believer in the glass rod, left in for at least three weeks He thought it a mistake to divide the continuity of the bowel, to suture the skin across through the mesentery, or to suture the bowel to the parietes No bag or cup and in most cases no disc was necessary He had seen two cases of hæmorrhage into the mesentery due to passing the rod under the bowel without mobilising

Mr R P **ROWLANDS** agreed that public and professional fears of the operation were unjustified, it prevented suffering and prolonged many lives He never brought the colon out through the exploratory incision, but made a separate stab incision He preferred the high left inguinal or iliac site When a glass rod was not available, a rubber-covered arterial forceps holding a swab could be used Each suture could be tied to the end of an appendix epiploica to prevent the colon coming further out The deep part of the stab wound was what should be small, rather than the skin orifice Mr Rowlands illustrated some points in his technique by slides.

Mr L **NORBURY** emphasised the need of educating the profession and public, and quoted the case of a man with a colostomy who bicycled from Bedford to London a year after his operation Stout seemed a very bad article of diet, producing diarrhœa, but often beer did not He used a subumbilical incision through the left rectus, as he thought it gave better control than the inguinal site, and that it even gave some hold over the passage of flatus He mentioned some interesting complications he had met retrograde intussusception of the lower end with gangrene, contraction of the opening with formation of a very tight fibrous ring, producing obstruction, coexisting diverticula which might rupture as the loop of bowel was being delivered, and very extensive prolapse of both ends

Mr **SWINFORD EDWARDS** recalled lumbar colostomies he had seen He did not think enough stress had been laid on conferring control after the operation, he had never done an inguinal colostomy again after trying the rectus incision, because the latter did confer a considerable amount of control He wished to stress also the deep silkworm suture through the aponeurosis, through the muscle if need be, and through the mesentery on both sides, so that four peritoneal surfaces were brought into adhesion This prevented a certain amount of prolapse, especially prolapse of the small intestine, and bisected the wound He had always been against cups of all kinds

Mr **TURNER WARWICK** said that the chief factor in preventing prolapse was the posterior rectus sheath; the opening in it should be just large enough to admit the finger He had had no ill-effects from carrying the suture through the bowel wall

The **PRESIDENT** mentioned the difficulty of operating on very fat patients, he had found that the way to deal with them was to take the surface down to the colostomy and not try to bring the colostomy up to the surface He had removed pieces of fat as large as 8 inches in diameter He believed strongly in the rectus incision, which gave an astonishing amount of control Most of his patients only washed out if a normal motion did not occur He never put stitches in the peritoneum, but sewed the anterior rectus sheath to the edge of the bowel

Mr A **LAWRENCE ABEL** said he had been impressed by the good results of Mr Miles's method He regarded a preliminary laparotomy as essential If the bowel were opened transversely there was no hæmorrhage or contraction In the left iliac fossa there were three muscles, each of which contracted, thus giving triple control, also the bowel was more easily brought to the surface there, and so a rod was unnecessary He put in a word for the peritoneal stitch

Mr W S **PERRIN** said that when he had given up the peritoneal suture he had had a case of huge prolapse He had tried both, and could not see much difference between the rectus and iliac incisions

Mr D C L **FITZWILLIAMS** regarded an exploration of the liver as important, the colostomy was then done in the wound already made He used a Paul's tube in obstruction cases, so that lateral wash-outs could be performed He never put stitches through the bowel wall; the appendices epiploicæ were better

Mr E T C **MILLIGAN** mentioned the plight of two men with no fixed abode who were turned out of hospital with colostomies and committed suicide after a few weeks of lodging-house life Any removable carcinoma of the rectum should be removed, whether there were metastases in the liver or not, there was no need for an exploratory operation He used the rectus incision, but had seen herniæ follow it, and the deep epigastric artery might be an embarrassment and source of hæmorrhage Some patients had great difficulty in getting control, and he thought it important to impress on the doctor that the bowels must be kept constipated, and to order wash-outs

Mr **MILES**, in reply, repeated his axiom that it did not matter what method were used provided the colostomy were effective It was a great mistake to delay it in cases of carcinoma, every day of delay was a day to the bad His objections to the rectus method were that it required considerable length of colon and produced a transverse fold within the radial range of the small intestine impulse to kill is attributed by Bjerre to a boundless hate having sprung up in the murderer when he found that he would be compelled to take public responsibility for their conduct, especially was he anxious not to be discredited in the eyes of certain rich old peasant families, and above all in those of his mother under whose complete domination he had always lived The abnormal affinities between such criminals and their mothers is made the subject of very interesting comments

The murderer whose crime is described as an example of "shamming" is a more loathsome person than the others, if possible, he is given as an example of one who strove, even with enthusiasm, to observe in every detail all that he could comprehend of the rules and laws of life and tried to convince himself that he had discharged the duties thus laid upon him, although he lived incestuously with three of his daughters and killed whether in an assault that proved fatal or by deliberate murder, his wife He also committed arson His form of "shamming" —and it is hard to see why he does not fall under the first heading of "self-deception"—seems to be that he justified the pretence to good citizenship because he worked hard on his farm He never thought of burning his property down until economic pressure drove him to do so, while he never thought of killing his wife until it appeared that her evidence might convict him of arson It is hard to credit the narrative, but we are told that the criminal did not believe that the abuse of his daughters was illegal, and justified it on the double grounds of economy and convenience

The book in translation reads easily, and the close investigation and real insight that have gone to its making are apparent Every opportunity that is taken for such psychological studies must supply material for public instruction on the difficult problems associated with crime and its apposite punishment on social grounds Many admirable people, whose kindness of heart all respect would benefit by reading Bjerre's commentary on the charitable proverb "tout comprendre c'est tout pardonner" He finds it a mischievous adage

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SERUM SICKNESS

Les Accidents Seriques By R J WEISSENBACH and GILBERT DREYFUS Paris Gaston Doin et Cie 1927 Pp 160 Fr 15 40

WITH the increase of the number of diseases treated by serum therapy the importance of a knowledge of the various manifestations of serum sickness is becoming more and more recognised In this small book of 160 pages on serum accidents, the authors have endeavoured to collect and summarise the main papers in the literature, and have added the results of their own experience, together with recently described atypical forms of serum reaction such as paralysis orchitis, and adenitis The work has been divided into four main headings (1) Immediate General Reactions, (2) Delayed General Reactions, (3) Local Reactions, (4) Focal Reactions The acute manifestations, including the sudden deaths that occur immediately after the administration of serum, are described, while a large portion of the book is devoted to delayed reactions, which may occur from the third to the seventeenth day, the majority being observed on the eighth and ninth days after exhibition of the serum, descriptions are given of meningeal reactions manifesting themselves either as sudden shock, or with meningeal symptoms accompanied by changes in the cerebro-spinal fluid In the chapter on pathogenesis the authors consider the sudden cases of death to be due to colloidoclastic shock in persons specially sensitive Similar reports of sudden death due to the injection of peptone have been reported The delayed reactions are held to be anaphylactic in character the mechanism being explained as follows From 10 to 14 days after the first injection there is present in the blood or cells a "toxogénine" or pre-toxin harmless by itself which may persist for a long time At the second injection the antigen unites with the pre-toxin, forming an apotoxin, the toxicity of which is augmented by the complement in the blood and which forms the anaphylactic poison The section on treatment deals with (1) prophylaxis or preventive treatment and (2) curative treatment The lessened danger of serum disease when "refined" or concentrated material is used is emphasised and the lines of treatment are standardised

A bibliography of 86 names is appended and the references are all to French authors, with two exceptions, these being to an English and an American writer respectively While much has been done by French workers on the subject of serum disease there is no justification for the omission in the bibliography of the important contributions emanating from other countries

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ULTRA-VIOLET THERAPY.

Clinical Application of Sunlight and Artificial Radiation Including their Physiological and Experimental Aspects with Special Reference to Tuberculosis By EDGAR MAYER, M D London: Baillière, Tindall and Cox 1926 Pp 468 45s

THE scope of this book is very wide Many subjects other than light therapy are considered, all of them bearing upon this form of treatment in one way or another The book has in all 468 pages, of these only 39 are devoted to the Clinical Application of Solar and Aerotherapy, and 73 to Clinical Studies with Artificial Light and the technique pertaining to it The remaining parts are given up to physics, the action of light on animal and plant life, the physiological action of light and the skin as an organ with special reference to its reactions to light. The small amount of space given to the clinical side may disappoint the practical worker who has been attracted by the title, but the rest of the matter is well worth his attention The author writes to some extent from his own experience in the treatment of tuberculosis at Saranac Lake, New York State, and his conclusions are that in treating this disease, reliance should primarily be placed upon rest, diet, and hygienic outdoor existence For the artificial aids to sunlight treatment the author has a good word he insists upon the necessity of individual attention upon each case, for he has found that some conditions not responding to sunlight and open air alone may require ultra-violet and heat radiation, X ray exposures, or indeed some combinations of these forms of therapy He includes in this book a chapter on the X Ray Treatment of Tuberculosis

The preparation of the book has evidently involved much labour · no less than 100 pages are devoted to a bibliography and index

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ADOLF KUSSMAUL

The Life and Time of Adolf Kussmaul By THEODORE H BAST, Ph D, Associate Professor of Anatomy, University of Wisconsin Medical School With a foreword by WILLIAM SNOW MILLER, M D D Sc, Emeritus Professor of Anatomy, University of Wisconsin Medical School New York Paul B Hoeber 1926. Pp 131 $1 50

THIS book is an expanded version of a paper read by its author before the Wisconsin University Medical History Society Kussmaul is, perhaps, best known in this country as being the first to practise œsophagoscopy and gastroscopy, the instrument used being the endoscope of Desormeaux This was in 1868 although Cruise, of Dublin, had suggested the use of the instrument for examining the stomach in 1865 Kussmaul was also the first to describe periarteritis nodosa progressive bulbar paralysis, and diabetic coma with acetonæmia Dr Bast gives many particulars of Kussmaul's early life He was born in 1822 at Graben near Karlsruhe his father being also a medical man Adolf Kussmaul had a sense of humour his name which, Anglicised means "Kissing mouth" caused him some embarrassment, The PRESIDENT congratulated Mr Buxton on the brilliant result The safety or otherwise of ligature of the carotids depended greatly on the condition of the arterial wall In young people there need be no anxiety, but in old persons it was a serious matter —Mr SLESINGER remarked on the uncertainty of the ultimate prognosis in these cases

Mr BUXTON replied that Mr Slesinger's remarks applied to exophthalmos following a bullet wound, rather than to exophthalmos resulting from a small fracture of the base of the skull

Dr HODSON showed a case of

Amœbic Hepatic Abscess

The patient was a man, aged 39, who, in June, 1926, had dysentery in India and was successfully treated with emetine He returned to England late in the year, felt ill in January last, and slowly got worse When seen by Dr Hodson on April 1st he had the typical condition of amœbic abscess, and the right side of the chest showed limited movement and a slight prominence over the liver Hepatic dullness began in front of the fourth intercostal space in the nipple line Skiagraphy showed a definite upward enlargement of the right lobe of the liver, with fixation of the diaphragm He prescribed for the patient gr 1 of emetine daily for three days, and told him to return in a week When he did so he said riding in an omnibus no longer caused him pain, and that he was able to do his work in increasing comfort A few more days of emetine treatment, of similar dosage, were followed by diminution of the protuberance of the right lobe and some diaphragm movement Some days later he only complained of a feeling of tightness over the liver Nine days' treatment brought about complete recovery

Dr Hodson said the case, like a number of others, showed that there was now no need to deal with this condition surgically This condition was not strictly speaking an abscess, but was more comparable to a gumma He believed that too large doses were given for this condition The only cases of mixed infection he had seen were those in which contamination of the wound had followed aspiration He had had five previous cases of the kind in which the results had been similar

Other Cases

Dr PARKES WEBER *showed a case of Pituitary Tumour*.

The patient, a man aged 47, had a pale cachectic appearance, with moderate anæmia, chronic headache, hemianopia (bilateral), and apparently an enlargement of the pituitary fossa The Wassermann reaction was negative His hair was scanty, he had none in the axillæ He was the father of four healthy living children During the last year he had been sexually impotent Some improvement had followed, brought about, Dr Weber suggested, by leakage of a pituitary cyst into the cerebro-spinal fluid

Dr WEBER also exhibited a man, aged 36, whose complaint was that of general weakness, and whose condition he diagnosed as abdominal lymphogranulomatosis maligna There was, he said, a very high degree of eosinophilia In the abdomen, to the left of the umbilicus, was a deep, hard, immovable swelling, but there was no sign of hydatid disease Apparently the spleen was enlarged The fæces contained occult blood

Mr C LAMBRINUDI showed a girl, aged 16, and asked for help in the diagnosis of her condition

At 2½ years of age she fell down stairs, and afterwards developed diarrhœa and vomiting, and pain in the back and neck Lumbar puncture was negative Her gait was very awkward, the knees and hips were somewhat flexed, and the back markedly lordosed, the knee-jerks were absent The extensors of the knees, the psoas, and adductors of the thighs were paralysed on both sides, and there was some contracture of knees and hips Both glutei maximi were much enlarged

He asked whether this was anterior poliomyelitis, or an unusual case of pseudohypertrophic muscular dystrophy *He believed it to be the latter*

Dr WEBER thought the patient had had infantile paralysis, though she might now be developing a primary muscular dystrophy It was suggested that underlying these conditions there was a weakness in the central nervous system

Reviews and Notices of Books.

THE PSYCHOLOGY OF MURDER

A Study in Criminal Psychology By ANDREAS BJERRE Translated from the Swedish by E. CLASSEN London Longmans, Green and Co 1927 Pp 164 9*s*

THIS book consists of three essays and an explanatory foreword, and constitutes, we are told, the first of a series of contributions to the subject, but as the author, who was professor of criminal law at the University of Dorpat, died young some 15 months ago, the sequels must be projected from other pens Mr Birger Ekeberg formerly Minister of Justice in Sweden, in a brief preface prepares us for the close analysis of the psychic life of criminals which Bjerre is able to supply, and testifies to his devotion throughout many years of his life to the study of Swedish prisoners in order by constant personal association to solve the riddles in their dark lives And certainly the three careers are dark enough which Bjerre supplies in illustration of the general propositions which he thinks to be warranted by his experience

In Bjerre's view, detailed investigation of the lives of particular offenders is much required, existing estimates of the character of homicidal criminals being too much based upon predetermined theses He recognises that some classification, according to common characteristics, must be the essence of scientific research, but finds that many widely accepted generalisations with regard to murderers are incorrect, because it has not been sufficiently recognised that there is with them a real inability to conform to ordinary type, so that deductions from their actions, based upon deductions from the actions of the mass, are likely to be faulty His contribution to classification takes the shape of a great generalisation—namely, that *weakness* (italicised by Bjerre) on the part of the criminal lies at the root of most murder crimes He does not profess to be satisfied with the theory as being complete, it formed in his mind against his will, and as a result of deeper intercourse with criminals he became fortified in the view And in what he means by *weakness* lies the originality of his ideas

The defect of *weakness* he divides into three classes as there is produced by it (1) "self-deception," (2) "anguished fear," and (3) "shamming", and the conduct of the particular criminals whose offences he details illustrates the three defects

The first, a hanger-on of brothels from the age of 15, requiring money to supplement his wages and his earnings as a *souteneur*, embezzled and departed with an associate, who had influenced him with stories of the wealth of great cities, on a rambling tour through Europe They remained at large for some months, spending the results of the crime until they were swindled by a theatrical adventurer, apparently a sexual pervert, and found themselves back in Sweden penniless They then murdered a postman on an elaborate but clumsy plan and were arrested The sentence of imprisonment for life gave Bjerre the opportunity of exhaustive analysis, and the reasons for classification of the case as typical of self-deception emerge The murderer had persuaded himself that the victim, whom it was only intended to stun, must carry at least 40,000 crowns, which society owed to his assailants, whose difficult position as penniless outlaws justified their action

The career of the second murderer explains what the author means by "anguished fear " Among these criminals a consciousness is engendered that something has been radically wrong in their lives from the beginning, leading them to a consciousness that definite individual effort from them will be useless The desire to conceal from the public actions which are esteemed reprehensible becomes coupled with a horror of all responsibility The murderer in whom *weakness* took this shape first attempted to poison his fiancée who was enciente by him, and later murdered her immediately after intercourse The

THE LANCET.

LONDON: SATURDAY, MAY 21, 1927.

MALFORMATIONS OF THE ALIMENTARY WALL

DIVERTICULA of the colon, to which a large space is devoted this week both in text and illustration, have been known in the dead-house for a century or more, but it is only within recent years that conviction of their frequency in late middle life is being brought home to the clinician, and this, as Sir BERKELEY MOYNIHAN points out, is the result of the increasing frequency of abdominal operations and of the aptitude of radiologists Among 1000 consecutive patients under the care of Dr E I SPRIGGS, in whom an X ray examination of the alimentary canal was made by Mr O. A MARXER, 10 per cent were found to have some stage of diverticulosis at an average age of 58 years While the yielding of the intestinal wall is an accepted fact, it is not yet agreed what is the cause of the yielding Some cases may be con- emital in origin, and in others the yielding is ascribed o long-continued increased pressure from within Addressing the State Medical Association of Texas Dr W S BAINBRIDGE recently stated his personal elief [1] that a large proportion of intestinal diverticula ave their origin in the mechanical factors of con- ipation But apparently Dr SPRIGGS's cases were not ore constipated than the controls, although there as frequent association with septic foci in other rts of the body, particularly the teeth, and with rly arthritis of the spine One-half of the affected rsons in this series suffered no inconvenience from e diverticular state of the bowel, and it is the rticular merit of Mr MARXER's work that he has monstrated by convincing X ray films the characterics of a prediverticular state which precedes for longer or shorter time the condition of established verticulitis His pictures show beyond contradiction at diverticula may be quiescent for years, serious mptoms only arising when they become mechanically ocked, it is delay in the pouch rather than in e bowel which is harmful Identification of the ease at an early stage has completely altered the tlook for these patients, which cannot be judged om the end-results of the operating and post-mortem oms such as those scheduled in our columns [2] by L R FIFIELD In the great majority of cases dical treatment will hold the symptoms in check, long as the alimentary canal is kept clean and ricated with paraffin under occasional review by barium enema the severer complications can be tponed and even avoided

Whether or not diverticulosis is of congenital origin f considerable interest in view of recent laboratory k on malformations of the alimentary mucosa would appear that errors or variations from the mal are commoner than used to be thought, and A L TAYLOR, working in Prof. STEWART's laboratory at Leeds, brings this out very clearly in a comprehensive account [3] of the epithelial heterotopias of the alimentary tract He describes in all 81 instances where epithelial structures properly belonging to one part of the alimentary tract have been found in another place, and this number could no doubt have been considerably increased if he had searched more thoroughly for the gastric glands which were found in the œsophagus at the level of the cricoid cartilage in as many as 70 per cent of bodies by SCHRIDDE Indeed, it seems likely that the complete examination of alimentary canals in serial microscopical sections might yield so many "abnormalities" that some of them would have to be reckoned at least as "normal" as the conventional descriptions in the text-books Limiting himself, however, to those of which some suggestion was apparent on naked-eye examination and those found in sections made for other purposes, he has found plenty of cases which he classifies into a most interesting catalogue Gastric mucous membrane is found in the œsophagus, duodenum, ileum (rarely), in Meckel's diverticulum, and in umbilical polypi Intestinal epithelium occurs in the stomach with surprising frequency in a series of 158 stomachs removed by operation (and it is only such material that can be examined properly for these details) it was found no fewer than 36 times —i e, in 23 per cent of cases In one case, Brunner's duodenal glands were identified in the gastric mucosa Similar misplacements of structures which normally lie deep to the muscularis mucosæ were also found the curious combination of glandular tissue and muscle known as "adenomyoma," occurred in the stomach and duodenum, and aberrant pancreas was found widely scattered in stomach, small intestine, and in Meckel's diverticulum Misplacements or malformations similar to this congenital series may also occasionally arise, secondarily, in sequence to destructive inflammatory and ulcerative lesions The whole account is fully documented and forms a valuable survey of a bypath in morbid anatomy In conjunction with it, Dr G W NICHOLSON's thoughtful papers in *Guy's Hospital Reports* in 1921–24 might be read again with advantage by pathologists and, we venture to suggest, by comparative anatomists as well

Of the many topics which arise out of these considerations, we can mention only two It is clear, in the first place, that there is no evidence at all that tumours, either innocent or malignant, have any special tendency to arise in malformations of the alimentary tract Adenomyoma is in some respects tumourous in character, but it has no particular propensity to develop further along these lines The more, in fact, that we know of anatomical "embryonic residues," the less likely does COHNHEIM's suggestion become The second consideration is the clinical importance of these malformations Most of them have none But Dr TAYLOR describes very striking cases where gastric mucous membrane in the ileum was associated with fatal ulceration, where misplaced Brunner's glands led to a duodenal ulcer in the stomach, and where gastric glands in Meckel's diverticulum give rise to repeated small hæmorrhages from the bowel so characteristic as to be susceptible of diagnosis Adenomyomas of the stomach fairly often give rise to serious dyspepsia their nature should be recognised for they are liable to be mistaken at operation for carcinoma and an extensive gastrectomy done instead of the local excision which is all that is needed

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edical Journal and Record Sept 15th and Oct 6th, 1926

[2] THE LANCET, Feb 5th, 1927, p 277

[3] Jour Path Bact, 1927, xxx, 415.

and when he was assisting Naegele at Heidelberg the worthy professor advised him to change it. Kussmaul declined because, he said, his family was descended from the noted physician to the Emperor Julian, Oribasius, who after Julian's death was banished from court and settled with some Goths on the Danube. Here his name was translated into Kussmaul from Os oris, a mouth, and Basium, a kiss. Dr Bast has supplied a simply written and sufficiently full record of one who benefited his fellows in many ways by his learning, and his little book will be valued by medical historians.

JOURNALS

Veterinary Journal.—The April issue is devoted entirely to the subject of clean milk, and contains interesting and authoritative articles on the subject written by members of the veterinary profession, medical officers of health, and others who have practical acquaintance of the relation of clean milk to the health of the general public. An editorial suggestion is made that the best method of ensuring that milk shall reach the public free from injurious matter is by cooperation, for inspection purposes, of medical officers of health and veterinary and sanitary officers, each of whom would find plenty to do in his own sphere without overlapping.

Mr Gofton, the chief veterinary inspector to the City of Edinburgh, draws attention to the mental chaos of the milk producer and dealer in respect of clean milk, until 1922, when the Milk and Dairies Amendment Act was made law, and milk was officially designated, "The Milk (Special Designations) Order" bringing the necessity of recognising the hygienic quality of milk before the Public Health Authorities, and the traders and consumers. During the past year the Milk and Dairies Act has been strengthened, and though there is room for further amendment, the general public, as a body, have learnt to object strongly to a sediment of cow manure at the bottom of the glass of milk purchased as a beverage. If the public can be brought to see that it is readily possible to produce clean milk, the farmer and dairyman will soon take the necessary trouble to prevent its contamination. The lectures of the National Milk Publicity Council in England, and the Scottish Milk and Health Association in Scotland, both of which aim at increasing the consumption of milk and improving its hygienic quality, are already having their effect, and such institutions as the National Institute for Dairy Research at Reading, and similar schools where instruction is given to teachers and dairy farmers, are producing a sanely critical frame of mind in purchasers.

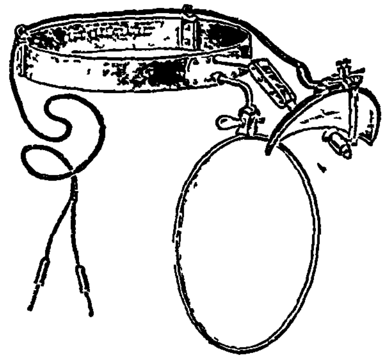
Colonel F E Fremantle, in a practical contribution, draws attention to the fact that the average consumption of milk per person in Great Britain is less than a quarter of that in the U S A, that tubercle bacilli are still to be found in samples of milk taken in our large towns, and that some 3000 British children die annually from drinking tuberculous milk, a preventable mortality which he describes as "constituting a disgrace of the nineteenth century which must be wiped out in the twentieth." For this elimination process he emphasises the great help which human medicine can obtain from collaboration with veterinary medicine. The same alliance for practical purposes is advocated by Mr E J Bundred of Blackburn, and Mr Robinson of the Harper Adams Agricultural College. The problems of a clean London milk supply are dealt with by Dr C W Hutt and Dr J B Howell, the medical officers respectively for the Boroughs of Holborn and Hammersmith, and Dr E G Gibbs-Smith, medical officer of health for Teddington, has written an especially practical and pithy article on the dangers of the present bottling system of milk distribution. After pointing out the disadvantages of the present shape of bottle and the faulty method of capping which is used by many vendors, he makes an excellent suggestion (which some of us may still live to see adopted) that a cardboard container (as in the case of cream) should be utilised, which would be used once only and then destroyed. He gives as his particular reason for this, that it would eliminate the danger of infection from imperfectly sterilised bottles, and instances a dairy which he recently visited where the cleansing was done by hand, and where, after the bottles were supposed to be clean, the bottom edge of the insides still contained quantities of congealed milk. Dr Gibbs-Smith also draws special attention to the advantages of a cap which fits completely over the top of the bottle and opens outwards, and Prof F Hobday, in an article embodying the treatment of milk in Sweden, particularly draws attention to the fact that this suggested system of capping is the one almost exclusively used in that country and in Denmark. The treatment of milk in these two countries, which may be considered to have given a lead to all other countries, is fully dealt within two articles by Profs Morkeberg and Hobday, and attention is drawn to the hygienic quality of milk which is drawn direct from the cow into sterile containers by the use of the Alfa-Laval Milking Machine, which is almost universally employed in Sweden and is now being used extensively in Great Britain. There are interesting discussions on the value of pasteurisation by Mr Tustin, technical adviser of the United Dairies Company, and Mr Edward Somer, one of the veterinary inspectors for the City of Birmingham, the latter holding that "pasteurisation is only a palliative measure, and does not help towards the production of clean milk . . helps to shield the dirty farmer and does not encourage cleaner methods of production."—Other valuable articles, contributed by Mr G Mayall, Mr W Forbes, and Dr Nathan Raw, help to make this special clean milk number of interest to those engaged in promoting the public health.

Dr G E Wyeth's "Surgery of Neoplastic Diseases by Electrothermic Methods," reviewed in this column last week, is published in this country by Mr Humphrey Milford at the Oxford University Press, price 38s.

New Inventions.

A MODIFIED FACE SHIELD

I have had made for me a modification of Killian's face shield with fibre head band in which celluloid is used instead of glass. The Killian's shield is a very useful appliance in an ophthalmic out-patient clinic where it is necessary for the surgeon to approach his face close to that of the patient. In a big out-patients' department it is almost essential, for in addition to acting as a breath shield and allowing surgeon and patient to talk freely without unpleasantness, it protects the surgeon from infections of the throat and nose which he is otherwise almost certain to contract should he be obliged to face a large number of cases daily. The advantage of the celluloid is in its lightness. The glass shield is more transparent, but it has the disadvantage of fogging when breathed on, it is also liable to give rise to headache when worn for a long time owing to its weight. This celluloid shield has also been adapted to the Clar head mirror (half mirror) as shown in the illustration. It has similar advantages to the above when used for work requiring a head light.



Messrs Down Bros, Ltd, 21 and 23, St Thomas's-street, London, S E 1, are the manufacturers.

Madras R E Wright, Lt Col, I M S

suspended matter, contains few microbes of any kind. and although hard the hardness is for the most part of a kind which is dissipated by boiling—SIR ALEXANDER HOUSTON does not himself believe that hard water is unhealthy. Some of the wells are situated so far afield as on Westerham Hill near the Pilgrims Way, and at Sundridge near the source of the Darent; at Eynsford, a little lower down the Darent Valley, the latest boring has just been completed The abundance of "indifferent" water in the county is contrasted by the Director with the paucity of mineral springs, of which practically the only example is the once famous well at Streatham, the water of which was used for long as an antacid tonic aperient

The Metropolitan Water Board, with SIR ALEXANDER HOUSTON in charge of water examination, stands as a champion of the utmost refinement in preventing pollution of a water designed for human consumption It is foolish the Director has said on several occasions, to allow preventable pollutions to reach a supply antecedent to purification, during and still more after purification it is "simply madness" The moral to be drawn is that cross-connexions of water-supplies should be avoided. The circumstances of an outbreak of illness which occurred at Poplar in July last, and are now the subject of a special report,[1] afford a good illustration of the cogency of this belief The outbreak, which at first was thought to be due to the ingestion of ice-cream was soon seen to be highly significant of a localised water-borne infection, owing to its sudden outburst, its brief duration, its incidence on all ages and mainly on women and children, and its selective distribution of cases in the vicinity of the gasworks The clinical symptoms were remarkably similar, diarrhœa being constant and severe, with fever ranging from 100° to 104° F, and nervous symptoms manifested by convulsions or fits not wholly confined to young children The symptoms, alarming enough at the outset, subsided for the most part in 24 hours, although two cases ended fatally After the attack labial herpes commonly appeared, often associated with buccal ulcers The character of the outbreak closely resembled one which occurred near Mansfield in 1915 due to pollution by sewage of a water main, when there were 1700 cases without a death, and Dr J C G LEDINGHAM isolated the Flexner Y type of dysentery bacillus In the Poplar outbreak however, no microbes were isolated which could possibly be concerned as causative agents, although this does not exclude the possibility of dysentery, for, as Dr W M SCOTT points out, the bacilli may very easily be missed The most probable source of contamination appears to have been the reflux of polluted water from the local gasworks into a main of the Metropolitan Water Board and the report contains an elaborate plan of the piping which made this pollution possible The serious aspect of such an outbreak is illustrated by the experience of Hanover last autumn when a fulminating attack of typhoid was preceded for a fortnight by a "water-sickness," due apparently to the ordinary bacteria of sewage when 20–30 000 persons suffered from acute gastric and intestinal catarrh Early last month the town of Elgin had a somewhat similar visitation on a small scale many families being attacked by violent vomiting generally accompanied by diarrhœa, to which it is reported the medical officer of health himself fell a victim The outbreak was there traced to a contaminated water supply, having coincided with the commencement of the cleaning of the main pipe which brings to Elgin the supply of water from Blackhills reservoir In this case the illness had no serious sequel. The Public Health Council of New York State recently collected evidence [2] of 38 outbreaks of typhoid fever which have occurred since 1903 within the State Department of Health. all of them definitely traced to cross-connexions between public water-supply and polluted private auxiliary supplies Leakage of check-valves may result, the journal remarks, in polluted water entering distribution systems of potable water and so render void all the costly precautions Cross-connexions of water-supplies have now been prohibited in the entire State of New York excepting New York City. The serious outbreak of typhoid reported this week from Gravesend is not attributed to pollution of the water-supply

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THE SITE OF THE UNIVERSITY OF LONDON

IT was announced last week that the University of London had been placed in a position to buy the Bloomsbury site It enters thereby upon a stage of development where not only will it be able to discharge its great work better, but where it can realise in a fuller manner the noble promise of that work. so taking up the proud position implied by its title The well-being and the progress of the University of London are necessarily dear to the imagination of the medical profession, which knows well how much it has owed and still owes to the famous medical faculty of the University, but the exigencies of the medical curriculum have been responsible for many vexatious dissensions in the past The purchase of the Bloomsbury site will have no sequel of that unfortunate sort: all the University must be benefited thereby The money has been obtained largely through the bounty of the Rockefeller Foundation

The University now possesses some eight and a half acres excluding roads, in a most favourable place It is the site which was bought by the Government for the University some eight years ago, but which was reconveyed to the vendor, the Duke of Bedford owing to the University at the time finding certain conditions impossible to comply with The chief among those conditions was the one which required from King's College surrender of its present site and of this there is no longer any question Of the eight and a half acres at the disposal of the University one small parcel has already been allotted for the erection of the central offices which will be transferred there from South Kensington, though the examination rooms at the Imperial Institute may still remain at the disposal of the University. The other most immediate demands upon the site would seem to be recognised by common accord to be as follows—perhaps in order of urgency There must be a senate house a central library a club for teachers, a students' union and headquarters for an officers' training corps Large sums of money will be required before such a central framework of a modern university can be erected and it is perhaps just as well that for this material reason there can be no premature rushing into bricks and mortar Secure in the knowledge that the site is their own the authorities can proceed to plan a university centre worthy of the capital of the Empire, and can plan it with an eye to proper development as much as to present needs

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[1] Ministry of Health Reports on Public Health and Medical Subjects No 41 Report on an Outbreak of Illness at Poplar suspected to be due to Local Pollution of the Water-supply By George C Hancock C B E, M R C S. H M Stationery Office 1927 9d

[2] Journal of the American Waterworks Association, September, 1926

PROBLEMS OF PELVIC INFLAMMATION

The recent Congress of Obstetrics and Gynæcology held at Manchester called forth various expressions of opinion on the treatment of inflammatory conditions of the uterine adnexa, and the different points of view are worth recalling Mr **Aleck Bourne**, who opened the discussion of this subject, confined his remarks to the treatment of acute gonococcal salpingitis, holding the opinion that in severe cases operation should be done in the acute stage, the tubes being slit and drained through the abdominal wall Prof **Beckwith Whitehouse** spoke of tubal inflammation in general, for which he adopts more conservative methods It is his practice, he said, to interfere surgically only when there is an extension of infection from the pelvis to the general peritoneal cavity or where there are indications of the presence of pus When interference is required his preference is for the vaginal route, and his object is to create as little disturbance as possible during the acute stage, fertility is least impaired when the operations performed are of the simplest kind With expectant methods, he remarked, "there is a strong probability that surgical treatment will be required at a later date, but it will be undertaken at a time when such intervention is safe and with a correspondingly low mortality (2 5 per cent) It is only in a comparatively small proportion of cases that radical measures, such as hysterectomy, will be necessary after such conservative surgical treatment" At the Birmingham General Hospital between 1911 and 1923, he stated, there were 137 hysterectomies among 387 operations performed for inflammatory pelvic disease, the mortality was 5 per cent No doubt the operation was done in the belief that the infected uterus remains a menace to the patient even if the tubes are removed There is very little reason to think, however, that the body of the uterus continues to be a potent source of infection, though there is plenty of evidence that the cervix harbours germs indefinitely Consequently, it seems that if anything at all is done to the uterus the cervix should be removed, as was advocated in the discussion by Dr S J **Cameron** In gonococcal cases, generally speaking, hysterectomy appears to be quite unnecessary, but it is logical to excise the interstitial portion of the tube with the cornu of the uterus, and this operation has many advocates

Prof **Blair Bell** spoke on the conservation of ovarian function in the surgical treatment of salpingitis, and agreed that the ovary should be preserved in its normal position wherever possible Where this cannot be done, he recommended that the ovary should be grafted elsewhere, as, for instance, to the uterine cornu or the rectus muscle Whilst all surgeons would agree that the ovary must be kept as long as the uterus is also present the short life and activity of a grafted ovary makes this procedure of doubtful utility, and sometimes a grafted ovary has had to be removed later because of trouble which has developed in or around it Several speakers were concerned with the fate of the ovaries after hysterectomy Prof **Archibald Donald**, in particular, held the view that they should always be removed with the uterus, and that a woman who has no uterus is just as well without her ovaries There is very little doubt that the ovaries atrophy rapidly after hysterectomy, and there is no definite evidence that the menopausal symptoms following this operation are any less distressing if they are preserved In this matter gynæcologists have undoubtedly been swayed by public opinion, and it has become the custom to preserve ovaries—even those in which there is a suspicion of infection—though it is very doubtful if the patient is any the better for this kind of conservatism

The end-results of salpingostomy performed for chronic tubal inflammation were discussed at the Congress by Dr **Bethel Solomons**, who recommended that during the abdominal operation the tubes should be inflated from the cervix to demonstrate the site of obstruction He detailed the operations for the cure of tubal obstructions, and reported that 32 patients subsequently conceived out of a series of 72 who were treated by salpingostomy Although hardly germane to the subject of discussion, it is of great interest to see that so many patients have become fertile after this operation, and this result lends weight to the plea for conservative measures in the acute stages Further support was given to this view by Prof. A H **Curtis**, of Chicago, who advocated expectant treatment in gonococcal salpingitis and said that he operated only for the sequelæ of the disease From the course of the discussion it was clear that the old principle of leaving acute gonococcal salpingitis alone is adhered to by the majority of gynæcologists The mortality of cases thus left is almost nil, many patients recover so completely that they conceive afterwards, whilst if recurrent attacks of peritonitis occur, operations can be done with greater safety at a later stage, when parts can be preserved which might well have been condemned to removal if seen when the inflammation was at its height Another point which emerged from the discussion is the importance of distinguishing gonococcal from streptococcal infection, which may be very difficult where there has not been a recent pregnancy

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WATER, PURE AND POLLUTED

The water drawn from the deep chalk wells of Kent is of unique purity and nearly inexhaustible quantity, and these wells, as we learn from Sir **Alexander Houston**'s latest report,[1] contribute about one-tenth of the total drinking water-supply of London, an amount which would suffice at 35 gallons per head per day for the supply of a town the size of Manchester Sir **Alexander Houston** takes the reader in imagination a delightful tour of the water-courses of the county, beginning in Deptford with the little known Ravensbourne, where the first pump was worked by a waterwheel designed by **John Smeaton** and steam-engines by **Boulton** and **Watt** were in action up to 1925 Unfiltered water was used until 1844 when the first filter bed was constructed, and a few years later an open reservoir was made which still remains as an ornamental pond in the district engineer's garden Then came the epoch of deep well boring which has again made it possible to deliver the water direct to the consumer without artificial treatment of any sort The only reproach which can now be brought against the Kentish wells is that their pumping operations have reduced the flow of the once abundant surface streams in which trout could be captured within living memory There would still seem to be plenty of water available in the vast bed of chalk which underlies the country and is only thinly covered by pervious strata where it does not reach the surface, only the new red sandstone is a possible competitor as a water-bearing formation The depth of the source ensures a cool supply on the sultriest days of summer, and the water is devoid of colour, is completely free from analysis it may be considered that in 73 per cent. of cases submitted previously to operation symptoms persisted, and in 82 per cent. there existed definite evidence of changes in the prostate or the seminal vesicles or in both on rectal examination. As regards the contained secretions only 11 patients (or 18 per cent.) had normal fluid, while 82 per cent. gave evidence of pus in the expressed secretions. The lesson to be derived from these observations is that failure on the part of vasostomy to relieve symptoms must to a great extent be attributed to the persistence of urethral lesions that are untouched by this operation; but even apart from such associated lesions, vasostomy would appear to have very little effect on chronic infections of the vesicle and prostate. Indeed when the anatomy of these structures is recalled it would be surprising if a single washing out of the vesicle with disinfectant were enough to effect a cure. The pelvis of the kidney is a cavity of comparatively simple structure compared with the lumen of the vesicle, yet a single renal lavage seldom effects a cure in a case of pyelitis. How slender is the hope, therefore, of stamping out a chronic infection of the vesicle by a single vasostomy. Dr. Kretschmer's analysis suggests that little can be expected of it.

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[1] Metropolitan Water Board Twenty-first Annual Report on the Results of the Chemical and Bacteriological Examination of the London Waters for the twelve months ended Dec 31st, 1926 P S King and Son, Ltd 21s

THE SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS

IT was in this country, over a hundred years ago that the first proposal to treat pulmonary tubercle by artificial pneumothorax was made by James Carson; yet the method was not practised here until long after it had become established abroad, and to de Cerenville, of Lausanne, belongs the credit of having made the first attempts at collapsing the lung by surgical means. His work had but little influence at the time, but a little later Quincke and Carl Spengler—independently of one another—had the same idea, and it is owing to their influence that thoracic surgery has made such strides in Germany. France, like other countries, has been slow in accepting this advance in treatment; even to-day there seems to be a persistent inertia and lack of faith; and it is therefore particularly interesting to read the contribution which L. Berard and F. Dumarest make to the April number of the *Revue de Phtisiologie*. For a long time these authors have been ardent upholders of modern thoracic surgery, and their results add confirmation to the mass of evidence—mainly German and Scandinavian—in favour of surgical intervention in selected cases of pulmonary tuberculosis. The successful results of thoracoplasty are even bringing about a reconsideration of the rule that this operation is unjustifiable if artificial pneumothorax can be done. Berard and Dumarest state that whilst artificial pneumothorax gives the best results at the beginning of treatment, its complications and the fact that the lung expands again make it ultimately less successful than thoracoplasty, where the case is chronic and where there is moderate resistance and capacity for the formation of fibrous tissue. Thoracoplasty is applicable only to chronic cases, whereas artificial pneumothorax may be used in acute cases as well, and when it is successful is preferable to a complete thoracoplasty. Berard and Dumarest consider, moreover, that sometimes a partial pneumothorax with hemidiaphragmatic paralysis has advantages over a complete pneumothorax. They are unquestionably sound in upholding the modern tendency to limit rib resection to the minimum compatible with efficient collapse of the affected part and to supplement this resection by phrenic evulsion. The best collapse of the apex is by partial thoracoplasty involving the first seven ribs; efficient collapse of the upper lobe and of the upper part of the lower lobe can be secured by thoracoplasty of the upper eight ribs and hemidiaphragmatic paralysis. The decision to do a thoracoplasty, as they point out, must not be made on a symptom or on a lesion, but on the considered merits of the individual case, and for this reason they urge that the cases should be studied and operated on in sanatoriums. The indications which they give are long standing, fibrotic and only slightly active disease with adherent pleura and a good general state of health, as well as conditions in which there is marked displacement of the mediastinum, or hæmorrhage. Thoracoplasty is also indicated for cases in which extensive effusion has developed after treatment by artificial pneumothorax, for tuberculous empyemata with mixed infection, and for bronchial fistula. In these last groups, however, the risks of operation are considerably increased. In all cases for which thoracoplasty is proposed the lesion in the opposite lung must be anatomically unimportant, fibrotic in character, and absolutely inactive. There are no special new points in the technique of Berard and Dumarest, but their observations on two vexed questions are specially interesting. At first, operating in one stage, their mortality was 33 per cent.; later, operating in two stages, it was reduced to 5 per cent. They use either local or general (ethyl chloride) anæsthesia, with a "certain preference" for the latter. Their statistics for 91 cases show "cured" 28 per cent., improved 22 per cent., and an immediate mortality of 18 per cent. Sauerbruch's statistics, which they quote, show 'cured' 42.2 per cent., improved 17.5 per cent., and an immediate mortality of 13.3 per cent. These figures are for 646 cases operated on before June, 1925. In the next 18 months 160 cases were treated with an immediate mortality of 5.5 per cent. To sum up, their paper shows once more how much can be done in selected cases by thoracoplasty and by phrenic evulsion to ameliorate the condition or arrest the course of pulmonary tubercle after all other means have been tried and when without surgical assistance the patient is doomed to a decline. Of those whose lives can thus be saved from one-third to one-half are returned to health fit to work, whilst an even larger proportion, being freed from infection, can enter again into home life without danger to those around them.

DEFINITION OF BLINDNESS

THE Blind Persons Act of 1920 has now been in operation for more than six years and, giving as it does certain monetary privileges to the blind, necessitates a definition of that term. The Act itself merely contains the somewhat vague definition, 'too blind to perform work for which eyesight is essential.' As Dr. A. H. Thompson points out in his Analysis of the Causes of Blindness on p. 1075 of our present issue, only a small proportion of those who need to be educated as blind have completely lost the power of perceiving light or recognising the movement of bright objects. He emphasises the fact that the acuity of central vision is not alone a sufficient criterion of blindness in the economic sense. There are, for instance, persons who can read the smallest type and yet have to be led about the streets owing to curtailment of their field of vision. The Ministry of Health is taking these factors into consideration. Last year[1] Circular No. 681 intimated that any person whose visual acuity with correcting glasses is greater than 6/60 cannot be considered blind within the meaning of the Act unless the defect of eyesight includes such special conditions as a great contraction of the field of vision. Another circular (No. 780) just issued repeats this intimation and states that on the whole the suggested criteria have afforded trustworthy guidance in determining whether a person is too blind to perform work for which eyesight is essential. It should be understood that the limit of visual acuity (6/60) is not to be regarded as a hard-and-fast line. Contraction of the visual field, which may be due to glaucoma, to retinitis pigmentosa, to partial optic atrophy, or other rarer conditions, must also be taken into account. Further, 'marked nystagmus' is mentioned for the first time as a disabling condition, and lest any other disabling

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[1] THE LANCET, 1926, i., 98[illegible]

Annotations.

“ Ne quid nimis ”

THE ROYAL SOCIETY'S CONVERSAZIONE

ON the evening of May 11th the Royal Society held the first of its half-yearly conversaziones at Burlington House. As is usual at these gatherings a number of exhibits were on view, and two demonstrations were given, the first illustrating the courtship of birds, and the second, by Sir Almroth Wright, F.R.S., dealing with the phenomena of intertraction. Sir Almroth Wright began by describing some observations, made in wounds, which had led up to experiments in vitro on the behaviour of saline solutions and serum in juxtaposition. Having displayed the intertraction between these media he ended his demonstration by showing the traction effects of hypertonic salt solution in a model section of a wound. Another exhibit, dealing (from a different aspect) with the properties of serum, was that of Dr. Thomas Lumsden, who showed the differing effects of treating cancer cells and normal tissues with cytotoxic sera. Accounts of his work at the Lister Institute have from time to time appeared in our columns.[1] From the medical point of view the tests available for detecting small quantities of arsenic are already sufficiently delicate, but it was interesting to note that an experiment demonstrated by Mr. A. A. King has been made the basis of a technique by which amounts as small as 0.00001 mg. may be estimated. The Gutzeit method is used for the preparation of a mercury-arsenic stain upon filter paper, which has been sensitised with pure mercuric chloride. When the paper is viewed in a beam of ultra-violet light transmitted through Chance's ultra-violet glass, which excludes visible radiation, the unchanged mercuric chloride fluoresces blue, while the mercury-arsenic stain stands out as a black disc. Mr. King also showed that under the stimulus of ultra-violet light distilled water is strongly fluorescent. By the use of the most refined distillation processes this fluorescence is considerably diminished, but so far it has not been possible to obtain a distilled water in which it is absent—which is free, that is to say, from any impurity. The application of ultra-violet light to microphotography was demonstrated by Mr. J. E. Barnard, F.R.S., who showed absorption spectra obtained by transmitting ultra-violet light through very thin layers of certain culture media. A series of photographs of bacilli made with ordinary and ultra-violet light showed the improvement in definition gained by using the shorter radiations. An apparatus for recording radiation from the sky, prepared by the Cambridge Instrument Company, was of interest to the radiologist. It consisted of a photo-electric cell so connected in a circuit of appreciable electrical capacity that the frequency of the discharge in the circuit depends upon the intensity of the radiation falling upon it. Experiments on the physiology and genetics of the covered smuts of oats and barley were shown by Mr. S. Dickinson, of the Rothamsted Experimental Station, Harpenden. In the vegetative state these fungi consist of uninucleate hyphæ of two genders (sexes) and infection of the seedling plant occurs only in the presence of both genders. The heterosexual attraction of the genders, regardless of species, was neatly demonstrated. Mr. Dickinson has developed a special technique for manipulating single hyphæ. He takes advantage of the surface-tension effects arising where an extremely thin glass rod is dipped into agar and then slightly withdrawn. The glass rod is mounted on a fine adjustment device by which it may be moved to any part of a microscope's field and by its aid the movement of a single hypha to any desired position is comparatively easy. This ingenious method may have some application to bacteriology. The value of the bolometer as a recorder of radiant heat was demonstrated by Mr. H. Dewhurst, who has invented a new way of making the instrument. A collodion film, sufficiently thin to show strong interference colours, is stretched over an annular disc of sealing wax which contains two inlaid metal contacts; a narrow strip of bismuth, about one-millionth of a centimetre in thickness, is then deposited by electrical evaporation across the film. The use of these extremely thin bismuth strips increases the rapidity with which the bolometer responds to radiant heat and correspondingly increases its usefulness. The British Thomson-Houston Company had a beautiful exhibit of a new type of electric discharge, whilst of general interest were the tie-rods shown by Sir Robert Hadfield, F.R.S., and made of high tenacity non-corrodible steel, which are being used at St. Paul's Cathedral to replace the original wrought-iron bars employed by Sir Christopher Wren. The forthcoming total eclipse of the sun was represented by models made by Dr. E. H. Rayner, of the National Physical Laboratory. One of these, a three-dimensional model of the shadow near the earth's surface, has been prepared for the Radio Research Board to indicate the plan position of the intersection of the moon's shadow with the region known as the Heaviside layer, about 60 miles above the surface of the earth. It is thought that the marked difference between the transmission of wireless waves during the daytime and at night is connected with this layer, concerning which more information is likely to be gained by observation during the eclipse.

LAVAGE OF THE SEMINAL VESICLES

IN a paper by the late Dr. R. Keith Fraser and Mr. L. B. Goldschmidt on the surgical management of surgical vesiculitis, which appeared in our columns some months ago,[1] the authors discussed the value of vasostomy as a method of treatment of this troublesome condition. They came to the conclusion that the use of this operation shortened the average length of treatment by 75 per cent., and often converted a case which was not responding to conservative measures into one that responded. It is interesting to compare with this the conclusions reached by Dr. Hermann L. Kretschmer, published in a paper read before the Genito-urinary Section of the Academy of Medicine, New York, last November. In this paper the author reviews 66 cases seen at his consulting-room on whom the operation had previously been performed. Of these 66 cases 12 had been operated upon twice, and one three times. The cases were carefully examined and questioned as to the relief that the operation had afforded. Thirty-three of them stated definitely that they had obtained no relief whatever; 11 declared that since the operation the symptoms had ceased; eight gave indecisive replies, and only four were of the opinion that they had been cured. The question of sterility as an end-result was also investigated; two of the patients were physicians who definitely stated that the operation had rendered them sterile; repeated examination of condom specimens had shown a complete azoospermia, abundant spermatozoa having been present previous to the operation. The possibility of sterility following the operation of vasostomy is, therefore, a point to be considered. As a result of a careful examination of the genital tract of the 66 cases, two observations were made by the authors. The first of these was that in a very large number of cases definite lesions existed in the anterior urethra, either in the nature of actual strictures or of soft, easily bleeding granulations. The second noteworthy feature was the large number of cases showing extensive pathological changes in the prostate and seminal vesicles, changes manifested by hardness, tenderness, or swelling. Forty-seven out of the 66 patients showed these alterations, the rectal findings being normal in only ten. In ten cases no rectal examination was made. Summarising Dr. Kretschmer's peutic value Mr. Pfund makes no reference to the use of vitaglass for the construction of solaria. This *glass it is true* is opaque to rays shorter than 2700 A.U, but it unlike the cellulose compounds which slowly become more and more opaque, has the advantage of remaining transparent for the longer rays In the second part of his paper Mr Pfund describes in some detail the actinometer he has designed for comparing the antirachitic efficiency of various sources of U-V rays His method depends upon the excitation of fluorescence in uranium glass by the U-V component of a mixed source of light The green fluorescent light is compared spectroscopically with the light from an incandescent filament lamp having a suitable filter, the luminous fields due to the two sources of light being focused in apposition. The appearance is thus somewhat like that seen in a polariscope matching of the two fields being obtained by varying the current flowing through the incandescent filament The relative efficiency of different sources of U-V rays may thus be referred to the current consumption of the filament lamp necessary to obtain a match with the fluorescence excited by the U-V rays in question While it may be very useful experimentally, this actinometer is hardly likely to be of so much clinical value as the inventor anticipates The recent discovery by Rosenheim and Webster of the intensely antirachitic potency of irradiated ergosterol will surely lead to the widespread use of this simpler and less expensive form of therapy in the treatment of rickets

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[1] THE LANCET, 1926, ii., 112.

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Wife aged 41 of M B who was helped by the Fund in February and August last year as he is trying to build up a practice in a small way Applicant is working in a small post on commission and does not make sufficient to cover expenses There are two daughters who are at school and have bursaries their outfit having been provided by the Church Voted £12 towards repaying debts

Subscriptions may be sent to the Hon. Treasurer Sir Charters Symonds at 11, Chandos-street, Cavendish-square London, W 1 condition has been overlooked, the circular adds an "etc" under which the certifying surgeon might, we suggest, include cases of myopia of a degree over (say) 20 dioptres, whose visual acuity may still be as good as (say) 6/36 We think the circular will be of service to the certifying surgeon who is required not only to state the degree of visual acuity in each eye of any applicant for State aid, but to give the nature and extent of the visual defects present, and also to state his own definite opinion, formed after due consideration of all the visual conditions, that the person is too blind to perform work for which eyesight is essential.

MEDICAL EXAMINATION BEFORE MARRIAGE

SHOULD a medical examination before marriage be made obligatory? This question, the title of an article by Dr Georges Schreiber, secretary-general of the Societe Française d'Eugénique, in the February issue of the *World's Health*, has aroused considerable interest in different countries and has provoked a correspondence in that journal which is still continuing In the original article Dr Schreiber reviewed the present situation in various parts of the world, mentioning specially those countries in which a medical examination or certificate before marriage is obligatory, and those in which institutions for facilitating such an examination have been provided, although it has not been made obligatory In France a Bill making a pre-nuptial medical certificate compulsory has been drafted by Prof Pinard, but no definite action has yet been taken Dr Schreiber himself advocates an obligatory certificate, but with optional examination Referring to Dr Schreiber's remark that it was regrettable that eugenic legislation in the Scandinavian countries left tuberculosis out of consideration, Dr Soren Hansen of Copenhagen points out, in the March issue of the same journal, that the death-rate from tuberculosis in Denmark has in the last 25 years fallen from more than 20 to less than 10 per 10,000, probably the lowest rate in any European country They prefer not to brand the tuberculous, but to fight the disease by spreading knowledge as to its nature and how to avoid it Dr Apert, of the Hôpital des Enfants Malades in Paris, pronounces himself in favour of persuasion through health education rather than coercion, instancing prohibition of alcohol as an example of the evil effects of compulsion, and pointing out that laws, unless supported by public opinion, cannot alter customs Prof Vladislav Ruzicka, of Prague, in another letter, states that he himself had drafted a Bill, which was approved by the Czechoslovak Eugenics Society requiring a medical certificate before marriage, but this Bill was rejected The proposed legislation required a compulsory medical certificate as an indispensable legal condition of the marriage contract, the certificate to be signed by an authorised physician and to state that the parties were free from any defect or disease which would interfere with marriage Some of the objections urged against this Bill were that it would not protect illegitimate children, and that unwillingness to submit to a medical examination might increase illicit relations and hence the number of illegitimate children Prof Ruzicka, in answer to this, quotes a German authority who has shown that every condition added to the marriage contract has been followed by a reduction in the number of illegitimate births In the May number the correspondence is continued by Dr Stella Churchill, who emphasises the need for public propaganda on this subject She considers that pre-parental responsibility should form part of sex-teaching in the schools and does not advocate a medical certificate without examination She believes that voluntary limitation of families would be the obvious sequence of a medical examination before marriage and foresees the abolition of "the present rather absurd code about professional secrecy—a code which inflicts misery and hardship on innocent victims" In the same issue Prof Jeanselme, President of the French National League against Venereal Diseases, pronounces himself in favour of a certificate covering such infirmities as tuberculosis, venereal disease, confirmed alcoholism, epilepsy, and insanity, but he believes, as Dr Churchill does, that education must precede compulsion He thinks that the task of educating the public should be shouldered by the leagues against venereal diseases, tuberculosis, alcoholism, and so on He also points out some of the difficulties in the way of granting certificates and considers that, if the principle is to be adopted, the certificate should be required of both sexes

A pamphlet issued by the Russell Sage Foundation of New York on the administration of the Wisconsin Marriage Law[1] throws some interesting sidelights on the practical administration of a law requiring medical certificates before marriage In August, 1913, Wisconsin enacted a law under the terms of which no man applying could receive a marriage licence unless provided with a physician's certificate which attested that he was free from acquired venereal disease A study of the effects of this law was undertaken by the Russell Sage Foundation in 1920 and concluded in 1925 The main conclusions reached were that the law has had educational value, through newspaper discussion and through the fact that large numbers of men receive a warning as to the dangers of venereal infection at a time when they are most likely to need it It has been a real factor in inducing men who expect to marry to make sure that they are fit To some extent the required examination has caused postponement of marriage A minority of physicians issue certificates without any form of physical examination, but most examinations appear to be thorough, and use is made of the State's free laboratory service A serious obstacle to the successful operation of the law is that it never had the medical profession actively behind it because their cooperation was not sought in drafting the Bill Of the 364 physicians who commented on the law, however, nearly two-thirds expressed generally favourable opinions The investigators consider that in the present state of public opinion it is practically impossible to subject women to compulsory examination in order to establish their freedom from venereal infection. The law has been handicapped by its very defective requirements and by the absence of any provision for State supervision No attempt is being made to eliminate the defects and no steps are being taken to win the cooperation of the medical profession Repeal was avoided only by a narrow margin in 1923, and the State Medical Society neither favoured nor opposed the repeal

WORKING STANDARDS IN HELIOTHERAPY

RADIOLOGISTS using ultra-violet rays are confronted by the same problem of practical and accurate measurement of the composite radiation as has been encountered in the case of X rays The difficulty of interpreting with any precision the dosage employed by various workers in this field is complicated, in the case of clinical U–V therapy by the wide variations of individual susceptibility In the April *Bulletin* of Johns Hopkins Hospital Mr A H Pfund describes his attempts to provide a standard measuring instrument whose range of sensitivity to U–V rays corresponds with the effective wave-lengths in the treatment of rickets The first part of his paper deals with cellulose compounds as material for windows transparent to U–V rays Cellophane, which proved to be the most efficient, has the advantage of being waterproof and of darkening only very slowly under the action of the rays It transmits 50 per cent of rays at 2550 Angstrom units and between 60–75 per cent in the region of 3000 A U, the effective end of the sun's spectrum While pointing out the opacity of ordinary glass for the U–V rays of therapeutic value, Mr Pfund makes no reference to the use of vitaglass for the construction of solaria This glass, it is true is opaque to rays shorter than 2700 A U , but it, unlike the cellulose compounds which slowly become more and more opaque, has the advantage of remaining transparent for the longer rays In the second part of his paper Mr Pfund describes in some detail the actinometer he has designed for comparing the antirachitic efficiency of various sources of U–V rays His method depends upon the excitation of fluorescence in uranium glass by the U–V component of a mixed source of light The green fluorescent light is compared spectroscopically with the light from an incandescent filament lamp having a suitable filter, the luminous fields due to the two sources of light being focused in apposition The appearance is thus somewhat like that seen in a polariscope, matching of the two fields being obtained by varying the current flowing through the incandescent filament. The relative efficiency of different sources of U–V rays may thus be referred to the current consumption of the filament lamp necessary to obtain a match with the fluorescence excited by the U–V rays in question While it may be very useful experimentally, this actinometer is hardly likely to be of so much clinical value as the inventor anticipates The recent discovery by Rosenheim and Webster of the intensely antirachitic potency of irradiated ergosterol will surely lead to the widespread use of this simpler and less expensive form of therapy in the treatment of rickets

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[1] Medical Certification for Marriage An Account of the Administration of the Wisconsin Marriage Law as it relates to the Venereal Diseases By Fred S Hall New York Russell Sage Foundation 1925 Pp 92 50 cents

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Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CCXXIV—THE MEDICAL TREATMENT OF CANCER OF THE STOMACH

IN no form of malignant disease are the results more depressing than in carcinoma of the stomach The absence of early symptoms gives the patient little warning and the obscurity of the physical signs often leads to delay in diagnosis It must be added that, even when diagnosis has been made very early the results of treatment whether surgical, medical, or radiological, are seldom less disappointing

In a later paragraph it will be laid down that surgery plays a most important part in the treatment of gastric carcinoma There are, however, many cases which are unsuitable for operation on account of the patient's general condition or the extent of the local lesion, there are others where surgery is not indicated even apart from these factors, and there are yet others which call for medical treatment when surgery has failed The medical treatment of cancer of the stomach is therefore a problem frequently before every medical practitioner

Curative Measures

Attempts at curative treatment fall under three headings (*a*) surgical, (*b*) medical, and (*c*) radiological, two of these forms of treatment being frequently combined

Surgical —Excision of the primary growth still presents the greatest hope of cure It should be attempted whenever possible In this connexion it must be remembered that pyloric growths producing gross gastric retention, with dilatation of the stomach and profuse vomiting, are not infrequently small in size and relatively easy to remove surgically

Medical —Curative medical treatment usually takes the form of intravenous injection of salts of the heavy metals, such as copper, lead, and selenium Great caution is necessary, and the results so far have been interesting rather than encouraging Attempts to cure cancer of the stomach by special diets have been uniformly unsuccessful The Wassermann reaction should be determined in every suspected case, benign gummata having occasionally been mistaken for malignant growths

Radiological —Deep X ray therapy may be tried, but should never be substituted for surgery in operable cases I have frequently seen amelioration of symptoms follow its employment, but never cure The implantation of radium or radon by a minor surgical operation is often a preferable form of radiological treatment, the growing edge of the carcinoma can in this way be attacked and localisation of treatment is easier

Palliative Measures

The treatment of symptoms and complications again falls under the heading of surgical, medical, and radiological

Surgical —The commonest use of surgery in cancer of the stomach is for the prevention of obstruction Remembering that pyloric obstruction is a frequent cause of death in these cases, the practitioner will be at pains to secure a short-circuiting of pyloric growths at a stage when such a procedure is practicable The selection of such a site for the stoma that subsequent blockage does not occur is a matter of surgical technique which is outside the scope of the present article Surgical operations for the prevention of pain by nerve-section are infrequently required

Medical —Here two main aspects of the disease overshadow all others, they are (1) obstruction, and (2) pain

(1) *Obstruction* —The necessity for the surgical prevention of obstruction has already been emphasised Cases are met with fairly often in which the extent of the disease or the patient's low condition preclude such operations Obstruction of the cardiac orifice is not here considered, its treatment does not materially differ from that of œsophageal obstruction

In inoperable pyloric obstruction the treatment of greatest value and most frequently neglected is *gastric lavage* It cannot be over-emphasised that gastric lavage is a procedure which patients, with very little practice, can themselves perform with ease and considerable advantage A soft rubber tube, of about the calibre of the little finger and if possible furnished with a single large opening half an inch above the tip, should be selected The patient should be taught to pass this at first daily, later as often as required, and the stomach should be washed with normal saline until relatively clean and empty Sodium bicarbonate solution is useful if there is any excess of mucus, and opiates may be added later by this route if there is an indication for them Gastric lavage should never be delayed until the time when it is an increased burden to the patient, he should, on the contrary, learn its value in the early days just as a patient in the early days of an attack of pneumonia will learn to appreciate the value of oxygen and call for it gladly, even in the delirium preceding the crisis

Diet is of great importance Patients with carcinoma are seldom hungry and there is no evidence that forced nutrition has any effect in delaying the progress of their malady If therefore hunger is allayed there is no reason for attempting to provide a large diet The *problem of obstruction remains* the most prominent Foods containing cellulose, such as green vegetables, brown or branny breads, fruits other than orange-juice and soft bananas should be excluded together with meat or fish in any large pieces, unless *obstruction in any degree be absent* Soups, carbohydrate gruels, milk, glucose solutions, and orange-juice are the foods of choice when obstruction is threatened, and alcohol is, in my opinion, a most valuable adjunct in these cases on account of its calorie value, sedative effects, and ready assimilation

There is nothing illogical in the combined use of such foods with gastric lavage, a partially obstructed stomach frequently relieved by lavage will allow the progress of more fluid than such a stomach treated in any other way In inoperable cases of severe pyloric obstruction nutrient enemata must be employed to relieve thirst

(2) *Pain* —Much of the pain and discomfort of cancer of the stomach is due to obstruction, and should be avoided by the measures described above There remain the pains of nerve involvement or due to the spread of the disease elsewhere Analgesics, such as bromides, pyramidon, allonal, and diacetate are often valuable in the early stages Luminal is sometimes very effective in controlling nausea and vomiting

When the diagnosis is quite definite and pain and discomfort are prominent, there is little to be gained by delaying the use of opiates In my experience, much needless suffering is caused through the mistaken belief that a stage in the disease will be reached when morphia in any form will become ineffective As regards cancer of the stomach, this is a profound error It is seldom necessary to give more than small doses of omnopon, or of such time-honoured preparations as tr chloroformi et morphinæ co or tr opii, in order to secure ease for the patient, provided that gastric lavage is used to allay the symptoms of obstruction

The personal attitude of the doctor towards his patient is at no time of greater importance than in these cases, and a steady optimism in the face of tragedy is both helpful to the patient and justified by the progress of medical science

T IZOD BENNETT, M D, F R C P Lond,
Assistant Physician, Middlesex Hospital

Special Articles.

UNIVERSITY COLLEGE, LONDON, AND MEDICAL EDUCATION.

Being a Centenary Address delivered at University College on May 13th, 1927,

BY SIR JOHN ROSE BRADFORD, K.C.M.G., M.D., F.R.S.,
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IT is perhaps fitting seeing the part this College has played and is playing in medical education that one of the centenary addresses should be devoted to a subject that must necessarily be of considerable interest to the community when we consider the ever-increasing importance of the part taken by medicine in our daily life even when we regard ourselves as being in vigorous health, to say nothing of the services required when disease is present or threatened Our founders were not only animated by high ideals but must also have been in some respects not entirely devoid of interest in what are sometimes called practical aims Thus at the foundation of the College there were but two faculties, one of arts and laws and one of medicine. and here the history of the College is not unlike that of the history of all human activities From very early times man has not only been profoundly interested in the study of those activities of the mind that are embraced in what is now understood by the term "faculty of arts" but also from the earliest times he has recognised that if he is to survive he must regulate his life according to his knowledge of the facts of Nature and he must also enter into regulated relations with his fellow men In founding this College with a faculty of arts and with a faculty of medicine, our founders recognised these fundamental principles and probably there is nothing very remarkable in this but what was remarkable, and what I hope to show in this address, is the extraordinary breadth of view that stimulated them and what a grand conception they had as to the real requirements necessary for the adequate study of medicine Further, I shall hope to show that this College has been faithful to the trust imposed upon it by its founders and that in the past century it has not been unworthy of this trust

Problems of Medicine

Medicine as a study and branch of knowledge has many attractions and amongst these may be mentioned the very wide range of its scope its extraordinary diversity, and its numerous relations with other varieties of human activity This, *no doubt* is one of its greatest dangers inasmuch as it leads frequently to the presentation of such complex issues that much courage is required in order to overcome the feeling of hopelessness and possibly even sometimes of despair that may be engendered The problems of the statesman. of the soldier and of the lawyer are universally recognised as being often of such difficulty as almost to defy solution but the problems that beset the follower of medicine are certainly not of lesser difficulty and require for their solution no less ability and no less degree of adequate study and preparation After all the statesman, the soldier, and especially the lawyer, has to pit his intelligence against that of another human being His problems are difficult enough, but they are in the main and essentially problems set by man The doctor, even the humblest and the least well-equipped by education, perhaps has all his problems set to him by Nature This does not add to the ease of their correct solution, further there is no court of appeal, and Nature certainly is, and always has been a stern judge. For these reasons it is surely of paramount importance that medical education should be organised on the best possible lines and that the future practitioner should at any rate have the opportunity of acquiring an adequate conception of the real nature of his work before he becomes immersed in and possibly overwhelmed by. the so-called routine of medical practice

We talk of the principles and practice of medicine or the science and art of medicine, just as the soldier talks of the science and art of war, and these are not fanciful distinctions but matters of the greatest importance A doctor who neglects the principles or science of medicine is not likely to have any greater success than a general who violates a fundamental principle of the science of war, but in both cases the judgment meted out will probably be professional rather than lay, inasmuch as the layman necessarily is often unable to appreciate the real issue. A practitioner of the art of medicine who does not regulate his art by his science often escapes criticism by the supposition commonly entertained that medicine is only an art and not a science and that there is something mysterious about disease that removes it from the category of things and leaves an opportunity for the action of chance. or of some other equally vague conception In other words. it is not realised that our failure or our uncertainty is due to our want of knowledge or possibly to the misapplication of our knowledge

Whereas the art of medicine is very ancient and teachers of this art flourished many thousands of years ago the science of medicine is of comparatively recent origin Hippocrates as we all know, was a great exponent of the art of medicine and we are still indebted to his genius for much of our knowledge even in the twentieth century medicine The science of medicine may be said to date from Harvey. a matter of some 300 years, but the application of the science of medicine to the art of medicine is a matter of much more recent date and it is here. I think, that University College has played a not undistinguished part I would like to say at the outset that it is not a question so much of any particular discovery having been made within these walls or by those connected with the College although there have been many such, and some of them great but rather the broader question of the relation of the science of medicine to other sciences and to the art of medicine and perhaps the most important of all the development of scientific methods and of the scientific type of mind in the pursuit of the art of medicine by the practitioner in his daily work It may, perhaps be said that in the pursuit of the science of medicine the disease forms the focus of attention. and in the pursuit of the art of the medicine the patient must be the first consideration Yet little or no success is likely to be achieved if the art be practised with unscientific methods or in an attitude of mind that is not familiar with the law that like causes produce like results and that the numerous apparent contradictions that we see in our daily work are not real exceptions but only apparent ones, due to the fact that the conditions are not really the same although they may at first sight seem to be so Medicine could give many illustrations of the truth of the great principle of *déterminisme*, laid down with such insistence in the writings of the French physiologist Bernard

Medical Training a Hundred Years Ago

The really great clinicians of the past who pursued the art of medicine, and were in truth great artists were nevertheless men who observed with scientific method and controlled their observations with scientific reasoning, hence the value of their results. and in many cases their successors through the centuries have only been able to admire their skill and marvel at the results they achieved with the limited means at their command These great men attracted followers and thus the teaching of medicine commenced; the disciples attended the Master and listened to what he had to tell them and doubtless they tried to imitate his methods It is scarcely an exaggeration to say that the teaching of medicine. in England at any rate had not advanced very much beyond this stage at the time of the foundation of this College

This country has had many great clinicians, and some of them have been physicians or surgeons attached to the hospitals of this country of ancient foundation, and such men, like the ancients attracted students who followed their practice in the wards, and in this way acquired some clinical knowledge. They "walked the hospitals," a phrase that came to be descriptive of a certain stage in the career of the student of medicine, and I am not sure that some of the great public are not still under the impression "that walking the hospitals" forms the major part of the educational programme of the present-day student.

The student, besides walking the hospital, did two other things, he was apprenticed to some practitioner, and under such circumstances might or might not acquire medical knowledge that would be of service to him in later life. Unquestionably he acquired a varied knowledge of human nature, which is one of the most important assets that he will require in his after life as a practitioner. The student also often attended some private school of anatomy, of which there were many, and here I may mention that I am old enough to remember the last of these, and my own father attended as a young man one of the most celebrated and notorious of such schools.

I do not propose to criticise these methods of education, they must have possessed some value, otherwise the history of medicine in this country would not contain the honoured names that it does. What I want to emphasise is the isolated and secluded character of the instruction given, and how it was entirely directed to the production of a practitioner. As an apprentice, as a student at an anatomy school or as one walking the hospitals, the ordinary student had no opportunity of widening his outlook on life, or of coming into contact with other branches of learning. It is true that at the ancient seats of learning in this country there were very small numbers of men who, having studied in the humanities, subsequently embarked on medicine, and some of the greatest names in British medicine are those of such men but the ancient universities did not afford facilities for the prosecution of medicine, and the great developments that have taken place in these old universities are subsequent to the foundation of this College, and are by no means unconnected with the developments that have been initiated here. It is also true that certain of the London hospitals had schools directly associated with them where members of the hospital staff gave instruction, not only in clinical subjects, but also in certain other subjects, especially anatomy.

Sir George Thane, our chairman, pointed out in an introductory address given by him in 1879 in this place, that in the year 1828 medical education in London was practically limited to providing the instruction required by the licensing bodies and this was not of a very extensive character. Thus the College of Surgeons required that a candidate for the diploma should have been engaged for at least six years in the acquisition of professional knowledge, and that he had attended certain courses of instruction—i e , three courses of anatomy, two of dissections and demonstrations, one of chemistry and one of midwifery, one of materia medica and botany, and one of practice and theory of physic. Further, he had to attend for one year the surgical practice of a recognised hospital. To fulfil these requirements the future practitioner of medicine became an apprentice to a practitioner, and not infrequently he entered on this when only 15 or 16 years of age, and came to London only for one or, at the most, two years, and there followed all the courses of instruction provided by the hospital or private school concurrently. Thus he went to such lectures as he was compelled to attend, he dissected, and he "walked the hospital or hospitals," all at the same time.

The London hospitals that had schools attached to them at this period were St Bartholomew's, St Thomas's, Guy's, and the London. Not infrequently the student attended at more than one school, and still more frequently he attended one of the private schools, owing to the reputation and fame of some individual teacher, this applied, perhaps, more especially to the schools of anatomy that occupied a very prominent place in the medical curriculum. The London hospitals at this period included amongst their staffs physicians and surgeons not only distinguished for their knowledge, but also men who were able teachers, and men who were capable exponents of some of the sciences ancillary to medicine. Medicine has not only received benefits from science but some of the results of so-called pure science have been obtained from the researches of men who were primarily practitioners of the art of medicine, and hence it is not strange that teachers of such subjects as chemistry and botany should have been found from the ranks of medicine.

The Limited Outlook

Nevertheless, the system of medical teaching here outlined as that prevalent when this College was founded was profoundly unsatisfactory, more especially from two points of view. In the first place, it was not only inadequate and imperfect, it also entirely lacked organisation and systematisation, but it also suffered from a much more serious defect than this, in that the educational problem was looked at from a far too narrow point of view. The aim was to produce an efficient practitioner and this must necessarily always be the aim of any scheme of medical education, but this result is not likely to be achieved if a scheme of instruction is devised that isolates the student and confines his outlook.

A hundred years ago the outlook of the student was limited from childhood, he became an apprentice when little more than a boy, at a most impressionable age, and from that time onward his teachers were animated by the desire to direct their teaching solely to the supposed immediate practical requirements of the moment. Anatomy was taught by a surgeon from the point of view of the surgeon of that day—i e , for its direct practical utility. I remember in my own day a teacher of medicine saying that just as a cabman must know the anatomy of London so a doctor must know that of the human body. This is, of course, quite true, but the real point is whether that is the sole reason for the cultivation of anatomy by the medical student, whether he should be taught to confine his ambition to that of the cabman or whether there is likely to be any gain to him purely as a practitioner from having an opportunity at any rate of perceiving that the study of anatomy may be pursued from a different standpoint and with other and less limited aims.

It is of course an old and difficult question, this question of medical education, and the increase of knowledge does not make the problem any easier. Is disease to be recognised and treated by a kind of rule of thumb method, or is the student to be educated on lines that attempt to develop his intelligence so that he may be equipped to deal with the complex problems that will fall to his lot? I think our founders had no sort of doubt as to their views on this matter. They looked on medicine not only as a practical art of great importance to all of us, but they also regarded medicine as a branch of learning that should take its place with other learning in any university that deemed itself worthy of the name.

A Debt to Edinburgh

A hundred years ago there was, at any rate, one university in these islands where these views prevailed, and that was the University of Edinburgh, this is a fact of special interest to us, since the debt of this College to the University of Edinburgh, and especially so far as concerns the faculty of medicine is a great one. This debt is not only that many of the early professors and some of the greatest of them came to us from Edinburgh, but in addition, the organisation of the faculty of medicine, and, indeed, the whole conception of the foundation of the faculty and of the hospital, are strikingly similar to those carried out at Edinburgh a hundred years before the foundation of this College

Last year the University of Edinburgh celebrated the bicentenary of its Faculty of Medicine, and the tale of its foundation was then retold, and how the inspiration that led to its foundation was derived from the University of Leyden, when the great Boerhaave, perhaps the greatest of clinical teachers the world has seen, so influenced certain young Edinburgh men that on their return to their native city they took steps that led ultimately to the foundation of the Faculty of Medicine in 1726 We are not concerned here with the details of this story, interesting as it is, suffice it to say that the faculty was started without any special clinical facilities, and that some years later—i e, in 1738—the Edinburgh Royal Infirmary was founded in order to provide a suitable hospital to afford clinical facilities for the teaching of medicine As you will see, a similar course was pursued here, and our hospital is unique amongst the great teaching hospitals of London in that, like the Royal Infirmary of Edinburgh, it was founded, thanks to the energy of the young Faculty of Medicine and the generous wisdom of the governing body of this College, as a means to provide full opportunities for the adequate teaching of clinical medicine and surgery

I do not think it is an exaggeration to say that the foresight, wisdom, and courage of our founders must have been very considerable for them to have embarked on the foundation of a faculty of medicine, with a very ambitious scheme of development, with no hospital and no obvious likelihood of acquiring a hospital, without which the scheme must have come to nought They are certainly entitled to our profound admiration and their work should inspire their successors not to fall short of their high standard

New Ideals at University College

The Faculty of Medicine of this College, when constituted 100 years ago, included professorships in chemistry, natural philosophy, botany, comparative anatomy, anatomy and physiology, materia medica, medicine, surgery, and midwifery Medical jurisprudence and pathology were added almost immediately The courses of instruction extended from October to May and the curriculum extended over a period of four years It is, perhaps, scarcely necessary to dwell on the contrast afforded by such a scheme of education with that then in vogue in the medical schools of this country, but after all, although schemes and curriculum may have some value, the real determining factors are the ideals, the character, and the ability of those to whom is entrusted the carrying out of the scheme The professors appointed to teach these subjects were unquestionably a most distinguished body of men, each of whom had achieved distinction in the branch of knowledge committed to his charge, and some had become entitled to a fame that is undimmed by the lapse of a hundred years

Amongst these early professors, either appointed at the foundation or within a few short years of the opening of the College, may be mentioned In chemistry, Turner and Thomas Graham, in natural philosophy, Lardner, in botany, Lindley, in comparative anatomy, Grant; in anatomy and physiology, Jones Quain, Sir Charles Bell, and Sharpey, in materia medica, Anthony Todd Thompson; in medicine, Conolly and Elliotson, in surgery, Sir Charles Bell and Samuel Cooper; in midwifery, Davis and later, Murphy, in pathology, Sir Robert Carswell It is, perhaps, not surprising that with such teachers the Faculty of Medicine of this College, which began its teaching in October, 1828, one month before its sister Faculty of Arts and Laws, included some 300 students in the second year of its life This large number of students showed also that there was a real demand for teaching of the character provided and that it is not really true that the student's horizon is limited to the requirements of examining and licensing bodies The success of the Faculty of Medicine was thus assured from the very outset and this, notwithstanding the fact already mentioned that the hospital did not exist In order to provide some opportunities for the teaching of the clinical subjects a dispensary under the charge of the professors of medicine and surgery was opened in George-street, and this dispensary contained a very small number of beds, probably what we should now call casualty beds, for the relief of the more severe cases of sudden illness, and certain arrangements were made with a neighbouring hospital, the Middlesex, for our students to have the privilege of visiting its wards

It must be borne in mind that at this period 100 years ago, regular systematic clinical teaching was not in vogue in any London hospital, the students simply walked the hospital—i e, attended the visits of the medical officers and watched their proceedings, and more especially the operations in the case of the surgeons The surgeons of this time when, of course, there were no anæsthetics, had developed a technique in which great manipulative dexterity and a phenomenal rapidity of operation were essential to success It was the period of "brilliant operating," and the surgeons of the greatest skill and eminence operated in the presence of large audiences of students, and it was a point of honour to perform operations, especially amputations in a time limited to seconds I believe that prior to 1828 not only clinical professors but even clinical lectures were unknown in London although in the University of Edinburgh there was a chair of clinical surgery, and such instruction as the students received during their hospital visits was casual and Socratic or conversational in character. To remedy this grave defect in medical education, our founders instituted two clinical chairs, one in medicine and one in surgery, held by Sir Thomas Watson and Sir Charles Bell respectively, but since there was no hospital their lectures and instruction were given in the Middlesex Hospital

The point that requires emphasis is that this was the first step taken in organising and systematising the teaching of clinical subjects and the recognition that such subjects demanded the same methods of organised teaching that obtained in other branches of knowledge Naturally, the development of this method could not take place freely until the faculty had a hospital of its own, and so soon as this was obtained the further development of this organised clinical teaching took place and two special clinical professorships, known subsequently as the Holme professorships, were founded with the special object of training students in the observation and study of disease The fame of Robert Liston, who held for some 12 years the professorship of clinical surgery, was not a small factor in the success of this school as a centre of efficient teaching

The Organisation of Clinical Knowledge

This conception of the founders of our College and the means they took to make it operative are, I think, amongst the most valuable of our assets and perhaps like some other possessions, their real value is not fully appreciated until they are lost The underlying idea of our founders was that the realm of clinical knowledge was a subject worthy of the same treatment as that accorded to other branches of knowledge in a university, and that it demanded full equipment and organisation That is a position that has not always been conceded, nor even at the present day is it as universally recognised as it should be

There is sometimes an impression that what is called clinical research as well as clinical teaching is not of the standard or quality that justifies the use of such dignified words as those of research or teaching That, however, is perhaps rather a matter of the individual than of the subject Clinical research has in the past had followers of the greatest intellectual attainments men who by their discoveries in clinical medicine have permanently influenced medicine—for example, Sydenham in the seventeenth century and Hughlings Jackson in our own The teaching of clinical medicine calls also for special qualities owing to the intrinsic difficulties of the subject arising, partly from its complexity and largely from the fact that the material is that of suffering human beings The teaching of most subjects of any university curriculum does not present the difficulties that beset any clinical teacher who is desirous of treating his subject with scientific method and accuracy

Although I have emphasised, perhaps at too great length, these developments in clinical teaching, after all the greatest thing our founders did was to place the teaching of each subject in the medical curriculum in the charge of an expert in that branch and thus ensure that the subject should be envisaged from a broad and not from a narrow and purely utilitarian point of view That is a conception that has persisted for the 100 years that have elapsed and has slowly spread from here to every medical school in the country and has I hope, affected the outlook of every student of medicine that has passed through its halls We know that it has been successful in producing during the last 100 years a number of men who have, thanks largely to the inspiration they received from the ideals of their teachers, enlarged the boundaries of human knowledge

Scientific Method in the Teaching of Medicine

It is difficult to lay too much stress on the effect of such a policy in the case of such subjects as anatomy physiology, and the biological, chemical, and physical sciences ancillary to medicine Medicine itself is such a complex study that it is by no means well suited for the training of the average individual in what we may call for simplicity, scientific method Great men with gifts may achieve results of the first importance in medicine by their researches and yet never have received any special scientific training There have been many such, but this will not be the common lot, and for the multitude it is essential that an adequate training in scientific method should be provided, and it is equally essential that the imagination should be stimulated by such training, and this is most likely to occur when the subject matter is dealt with by one devoted to its study for its own sake No doubt this method is liable from time to time to cause difficulties, owing to the well-known impossibility of getting a quart into a pint pot, but on the whole the advantages outweigh the drawbacks

Placing the teaching of these subjects in the hands of unquestioned authorities on them led to other developments that have brought about great changes in teaching, and for that matter, in examining The professors very early on instituted practical classes, there were practical classes in chemistry from the beginning of the life of the College, and as early as 1845 a second professor of chemistry under the title of professor of practical chemistry was appointed Sharpey, the great professor of physiology, instituted practical classes in histology, and in 1855 a separate teacher of practical physiology and histology was appointed and later on Michael Foster occupied this position until 1870

It is interesting to note that University College did not follow the requirements of the licensing bodies and institute practical classes after they had been made compulsory by such examining bodies, but rather that University College established the practical classes to render the teaching more efficient, and ensure that the student's knowledge was obtained first hand, and then the examining bodies followed suit and laid down regulations making such classes obligatory The history of the College in later years is somewhat similar, there have been occasions even in quite recent times when teachers have tried to instil in those controlling examinations the methods that should be adopted, and it would seem that this is really a sound and truly physiological method that has also the record of past successes in its favour The practical classes were not confined to subjects in which laboratories formed an integral part of the teaching equipment, they were also instituted in the routine teaching of clinical medicine and surgery, and classes were formed enabling every student to receive definite and systematised instruction in the physical signs of disease This was a most important development inasmuch as it introduced scientific method in the teaching of the art of diagnosis of disease, and some of the most distinguished of the physicians of University College Hospital have been noted for their work in this branch of medicine Here I may mention two names, first that of Elliotson, who was a pioneer in introducing the stethoscope in this country, and Walshe, who by his work, his writings, and his teaching placed the study of the physical signs of disease on the secure basis that has been maintained ever since Walshe, through his pupils, carried the teaching of physical signs to more than one of the great medical schools of London Thus the teaching of medicine was rapidly put on the same level as that of the teaching of other branches of science, it was organised, systematised, and made objective and real, the student being made to realise facts for himself and not merely listen to *ex cathedra* utterances

There was another far-reaching development initiated in this College by the foundation of the chair of pathological anatomy in 1828, and although our founders held the view that the art of medicine must be founded on the study of morbid anatomy, it was not until 1872 that this subject became a compulsory one in the medical curriculum Here, however, in season and out of season, from the foundation of the College to the present day, all the teaching of medicine has been correlated with the teaching of morbid anatomy, and our belief and tradition have always been that this is essential for the progress of medicine as a science Our greatest teachers, like Walshe and Jenner, were insistent on this, and much of the success of our students in research, in teaching, and in the practice of their profession, is, to my mind, dependent on this method of training that is a stern corrective of fanciful and theoretical medicine that at all periods, including the present day, has its exponents who do not usually hide their lights under a bushel, and to whom the close association of the art of medicine with the facts of the dead-house is only a subject for cheap witticism

The Student's Opportunity

Another element that has had a great influence in the history of this College in all faculties, and not least in the Faculty of Medicine, is the fact that teachers have always recognised that one of their main duties is to enlarge the boundaries of knowledge and do all in their power to stimulate research Some have done this by their own work, others have achieved great results by the inspiring of their pupils but all have necessarily produced incalculable results in modifying the outlook and point of view of every intelligent student who has come under their influence I do not propose to attempt even to sketch what has been done in this direction in the past 100 years, all I desire to draw attention to is that so great was this influence that there have been many teachers here from the days of Sharpey and Wharton Jones to recent times, who have so inspired their pupils that these, even during their student career, have embarked on researches that have proved to be of permanent value The early histological and physiological researches of Lister are a sufficient illustration of this fact, and such facts form one of our most valuable traditions

In conclusion, I would desire to allude to other changes profoundly affecting the medical student that were initiated here either by our founders or by their early successors A hundred years ago the student was in a measure the appanage of some individual member of the hospital staff, in order to obtain the advantages of following his practice in the wards of the hospital he had to become his pupil and pay him personally a fee Later, when resident appointments were instituted, house physicians, house surgeons were personal appointments by the physician or surgeon concerned, and here, again, a fee was payable All such methods were swept away here and all appointments were made on the ground of merit alone, and no fees of this kind were received by the staff When we remember the great value of these appointments to the student, there is probably no appointment to a young man of such value as a house physiciancy or surgeoncy, and when we remember the extremely important part these officers play in the life of a teaching hospital it is perhaps unnecessary to dwell on the great effects that such a change as that made here in our early life must have had on medical education, at any rate, our example has been followed by others

The teaching of medicine is no light task, but so long as our teachers here are inspired by the same ideals as those that spurred on our founders. and so long as they faithfully follow them there is every reason to hope that with the enormously improved equipment of the present the successes of the future may be even greater than those of the past

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MEDICINE AND THE LAW

Vaccination Register. Landlord's Right to Inspect

An unusual point of vaccination law came before the King's Bench Division at the beginning of this month The governors of the Peabody Donation Fund, incorporated by Royal Charter in 1900, own blocks of working-class dwellings in various parts of London and are authorised to impose regulations terms, and conditions on the occupation thereof The governors have made it a condition of every tenancy granted by them that every member of the tenant's family should be vaccinated In order to find out whether the condition was being obeyed, the superintendent of the Peabody estate at Southwark asked to be allowed to inspect the vaccination registers but was refused permission by the Southwark guardians The point had previously arisen in 1913 when a tenant made a statutory declaration of conscientious objection On that occasion the vaccination officer informed the superintendent of the Peabody buildings and the tenant was consequently given notice to quit The tenant thereupon complained to the President of the Local Government Board (the predecessor of the Minister of Health) who seems to have expressed the opinion that the vaccination officer had exceeded his duties Acting on this opinion the Southwark guardians refused the information in the present case, being themselves inclined to the view that it was not proper to allow the vaccination register to be searched for the purpose of putting pressure upon a tenant They at the same time expressed their desire to carry out the law and to act in any manner which the court might direct

The law is to be found in Section 24 of the Vaccination Act of 1867, which says that every registrar must keep a book in which he shall enter minutes of the notices of vaccination given by him and shall also register the certificates transmitted to him, the section declares that he is to allow searches to be made at a specified fee This seems clear enough and the only way in which the Southwark guardians could suggest that the right of inspecting the register had been taken away was by arguing that, because by later enactments the form of the register has been changed or extended therefore Section 24 has been impliedly repealed It is true that Section 2 of the 1898 Act provided that a parent might exempt himself from penalty by delivering to the vaccination officer a certificate of conscientious objection, and that this provision was further altered in 1907, so that the conscientious objector need merely send a statutory declaration instead of a magisterial certificate But as Lord Hewart has now observed, the original section of the 1867 Act remains substantially undisturbed The certificate of successful vaccination—the foundation of the section—remains; the other certificates as to unfitness for vaccination and insusceptibility to vaccination also stand, and the name of the medical practitioner is preserved as it always was The only new ingredient was the 1898 provision relating to conscientious objection, and it was a desperate argument to suggest that this had so altered the 1867 Act as impliedly to repeal Section 24 The three judges forming the court unanimously upheld the right of inspection and made absolute a rule *nisi* for *mandamus* directing the vaccination officer or officers of the Southwark guardians to show case why search of the register should not be allowed

Nuisance from Noise

Two motions for injunction to restrain nuisance from noise in London came before the Chancery Division on May 6th In one case the Strand Hotel Ltd applied to stop the use of a pneumatic drill in excavation operations on the site of Oddenino s Restaurant between 9 P M and 7 30 A M The action was settled on the terms of the injunction applied for except that the hour of 9 P M was altered to 10 P M · the motion was treated (as often happens in the Chancery Division) as the trial of the action and there was no order as to costs In the other case the Duke of Westminster applied for an injunction to restrain a defendant from leaving motor-cars (or permitting them to be left) standing in mews near Belgrave-square with engines running, from blowing horns or hooters without reasonable cause, and from doing any other thing which might cause nuisance, damage. inconvenience or disturbance to tenants and occupiers of adjacent properties The defendant was a sublessee of premises used as a motor garage with living rooms above, the subdemise contained the usual covenant against anything which might cause nuisance. inconvenience, &c, to the neighbours. Seven adjoining occupiers had complained it was said that people arrived at the premises at early hours in the morning and allowed their car engines to race noisily Mr Justice Clauson granted an injunction until trial of the action

Nuisance from noise is a matter in which hospitals and nursing-homes have a keen interest Although the noise of railways and trams the ordinary roar of traffic and the established sounds which assail the ear in an industrial district may have to be borne without remedy, the law will give some protection against the use at night of imported nuisances such as the pneumatic drill

Sale of Dentist s Practice. Allegation of Fraud

For the second time the jury have disagreed in the action brought by Mr Mervyn A Holland, of Upper Brook-street against Mr Cameron R. Stewart of St Andrew s-road, Surbiton for alleged fraudulent representation on the sale of a dental practice The plaintiff is thus at liberty to bring his action a third time During the course of the recent hearing the plaintiff was questioned as to the scale of his charges "What scale do you charge King s Counsel?" asked Mr Justice McCardie "It is what they are charging me that is worrying me, my lord" replied the plaintiff One need hardly point out that cases of this kind suggest that some method of arbitration would be more satisfactory, and would more easily avoid undesirable publicity and obtain the desired finality as well as being less expensive than protracted and inconclusive hearings before a judge and jury

The case for the plaintiff was shortly that the defendant told him the practice was capable of producing £2000 a year that he therefore bought it for £2000 and eventually found that the total value of the patients who came to him from the plaintiff was less than £900 It was suggested that some of the names on the books were those of patients who had consulted Mr Stewart as long ago as 190 and then only once, and that other names were those of members of the Canadian Expeditionary Force who returned to their own country after the war The *case for the defendant* was a denial of misrepresentation, he maintained that whatever he told Mr Holland was true or that he (Mr Stewart) believed it to be true · he contended that Mr Holland relied on the reports of his accountants who had examined the books of the practice The defendant, in answer to the judge, said the plaintiff had never asked him to specify the number of "live" patients in the practice; he added that no man on earth could pin himself down to a definite figure in this connexion. On the third day of the present hearing the jury, after retiring for over two hours, said they found a verdict for the plaintiff and assessed the damages at one farthing. The judge pointed out that this would hardly do; if there was any damage at all, it was indisputable that the amount of damages must be substantial. After his lordship had explained the law again to the jury, a juryman stated that they had reached their verdict in the endeavour to avoid placing on Mr. Stewart the stigma of fraud and in order to come to a final decision. Asked if the jury would like to retire again, a juror replied that further discussion was useless. "A number of us" he said, "object to finding that the defendant intentionally acted fraudulently; we believe that this practice was arranged to be bought in some private conversation between the plaintiff and the defendant which has not been disclosed in court because it was under the seal or secrecy of freemasonry." Whatever the justification for this unusual comment, the jury were held to have disagreed and they were, therefore, discharged. The defendant has the satisfaction of knowing that on the allegation of fraud (which every professional man must resist with his last penny) the jury were not prepared to find against him; but he has the uncomfortable uncertainty of not knowing whether these protracted proceedings will again be renewed.

PHYSIOLOGICAL SOCIETY

THE JUBILEE DINNER

THE jubilee dinner of this Society, held on Friday evening May 13th, at the Hotel Metropole, London, under the chairmanship of Sir **EDWARD SHARPEY-SCHAFER**, was a highly successful function. The proceedings were prolonged till the approach of midnight, and the speeches, if discursive, were informing as to the growth of the science, from its infancy in Victorian days to its present proud position.

After the loyal toasts the prosperity of the Society was proposed by Major **WALTER ELLIOT**, M.P., D.Sc., who rapidly traced its growth through 50 years of steady evolution, recalling to memory, among the famous men of old, Sharpey, Pye-Smith, Dew Smith, Burdon-Sanderson, Michael Foster, and David Ferrier, Thiselton-Dyer, Ray Lankester, and the Chairman himself, four among the pioneers who still were with us. And with them he coupled Lord Balfour, the President of the Council, as of similar philosophic attainments. Speaking as one who had left the Arcadian paths of science and declined into Parliamentary life, he painted the joys of those who were privileged to be working for the revelation of secrets whose wonders were certainly to surpass the wonders already laid bare, as the apparently logical framework of the past was upset by modern objectives.

Sir **EDWARD SHARPEY-SCHAFER**, in reply, pointed to the history of the Society and the character of the present meeting as proof that the aims of a small dining club, founded in 1876, had had a wonderful fulfilment. The club had been started by a group of biologists in order to defend their studies against the attacks of ignorant humanitarians, which were resulting in giving to France and Germany a clear pre-eminence over British scientists. The first forward movement in physiological education came, he said, from Burdon-Sanderson, a physician, and Sharpey at University College, London, assisted by Michael Foster, a young man imported from general practice in Huntingdon. Then came Humphry at Cambridge, an anatomist who recognised the sterility of anatomy uninformed by biology. The dinner meetings, from which the Physiological Society took its origin, were organised by Burdon-Sanderson, and the club was at first limited to the 19 persons who responded to some 40 invitations, of whom, as they had been told four still survived. From this movement, designed to further physiological research and to enter into international relations for that purpose, the Physiological Society had sprung.

The guests were proposed by Sir **CHARLES SHERRINGTON**, who welcomed especially the visitors from abroad, and hoped they would not be disappointed at receiving a more material welcome than would have been represented by physiological papers. He coupled with the toast the names of Sir Ernest Rutherford, President of the Royal Society, Prof. Giulio Fano, from Rome, Prof. E. Gley, from Paris, and Viscount Knutsford, Chairman of the Research Defence Society.

Sir **ERNEST RUTHERFORD** said that the Physiological Society could be claimed as a child of the Royal Society, its founders and its eminent workers being almost without exception Fellows of the parent Association. Speaking as a physicist, he pointed to the multiplying and strengthening of the links between the two branches of knowledge as instanced by the researches, for example, of A. V. Hill, Einthoven, and Adrian, and said that such cooperation was leading to great developments in biological knowledge, and in future would produce even vaster results. Like the previous speakers he paid tribute to the loss recently sustained by science in the death of Starling.

Prof. **FANO** paid a tribute to England in terms which were warmly received. He spoke of English work not only at home but in our many colonies which he had visited, and showed himself a diligent follower of English literature as well as English science in his love of Dickens, Thackeray, Eliot, and Conrad, the Pole. He compared Dante, the great artist, with Shakespeare, the world's philosopher, some of whose supreme heroines were Italian women.

Prof. **GLEY** spoke warmly of the debt owed by all to English physiology for its accomplishments during the past half century. He recalled to the audience the loss sustained by the world through the untimely death of Victor Horsley, and concluded by an eloquent declaration that physiology was a truly international matter, and that all over the world those who sought out its truths did so upon common principles.

Lord **KNUTSFORD** spoke in unconventional vein. Reminded by a personal swimming incident, he called the attention of the meeting to the debt owing to the Chairman for his work in devising the technique for the restoration of the apparently drowned. He declared that he knew no hole except a golf hole, that a physiologist could not get out of, and he wished that the House of Lords could receive the counsel of some physiologists as peers. He regretted, speaking for the Research Defence Society, that more medical men did not combine to refute the calumnies of the enemies of research.

The health of the Chairman was proposed by Dr. **LEONARD HILL**, and after a brief response from the chair, the evening closed with the singing of Auld Lang Syne.

KING EDWARD'S HOSPITAL FUND FOR LONDON

THE annual meeting of this Fund was held at St. James's Palace on May 13th. The **PRINCE OF WALES** (the President), who was in the chair, read a message from the King expressing appreciation for the work being done. The Prince of Wales went on to say that the ordinary distribution had been growing steadily since the Fund was founded 30 years ago by King Edward. In 1926, as in 1925, it amounted to £245,000 and to keep it at this figure at least £27,000 was needed in donations alone. Last year £17,000 had been received in two gifts of £10,000 and £7000, and this year one of the two donors, who for the fifth time preferred to be anonymous, had given £8000. Very nearly the whole of the Wells legacies (more than £200,000) had now been distributed and these legacies had helped with 50 schemes, providing about 1200 additional beds, of which 144 were beds for accidents This was the second time the King's Fund had had a large sum of money at its disposal for helping the hospitals with schemes of extension and improvement In 1920 £250,000 was entrusted to the Fund for that purpose by the Joint Committee of the British Red Cross Society and the Order of St John out of surplus war funds Then, in 1924, munificent legacies were received from Mr and Mrs Wells The need for hospital extensions was so great that the Red Cross money had been spent, and numbers of fresh schemes had come forward Now, after another three years, the Wells legacies were practically exhausted, and still fresh schemes came on It was his urgent desire that other generous donors, when they saw the enormous good done by the use of the Wells gifts, would be forthcoming to enable them to meet the new needs that were already in sight It was really astonishing what a lot of money was subscribed under the voluntary system for hospital building schemes The total in 1925 was no less than £691,000 Part of this was given in large sums by public-spirited individuals who became personally interested in the schemes of particular hospitals Part of it came from gifts entrusted to the King's Fund to be distributed according to the knowledge which the Central Fund possessed of the relative claims of the different hospitals The pensions scheme was an example of another function of a central fund Assistance had been offered to the hospitals in London that had decided to adopt the scheme The King's Fund would not itself take part in the administration, but gave the scheme its blessing and its help, believing it to be in the interests of the efficiency of the hospitals and the nursing service of the country. Just now the question of the provision of hospital accommodation for paying patients had come very much to the front, and he had appointed a committee of inquiry to go into the subject with Lord Hambleden as chairman, who would have as his committee two medical members Sir John Rose Bradford and Mr Warren Low, and two lay members, Sir Bernard Mallet and Prof Winifred Cullis

Lord **REVELSTOKE** (the hon treasurer) said that the accounts showing the results of the year's working were rather better than had been anticipated, for the net receipts exceeded the estimates by nearly £5000 The receipts less expenses amounted to just over £240,000, while the amount of the ordinary distribution was £245,000 Further, the Fund distributed an additional £39,750 on account of the Wells legacies The total amount distributed was therefore £284,750 During the 30 years since the King's Fund was founded it had distributed in all a total of somewhat over £5,500,000 The position of the invested funds was satisfactory The market value of the investments on Dec 31st last, £3,369,242, was now 3 1 per cent below their book value—a very satisfactory result in view of the fact that a proportion of the securities was acquired more than 20 years ago, when the rates of interest ruling were extremely low

On the motion of the Earl of **DONOUGHMORE** (chairman of the Management Committee), seconded by Sir **BERKELEY MOYNIHAN**, the annual report was adopted, and after a vote of thanks to the Prince of Wales, the proceedings ended

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LONDON HOSPITAL SATURDAY FUND —The report for 1926 states that the income of the general fund was £79,192, almost the whole of which was derived from collections and donations The income was somewhat reduced by the industrial unrest, and the present year already shows an increase upon the corresponding period of 1926

WEST END HOSPITAL FOR NERVOUS DISEASES —Speaking at the annual meeting of governors of this hospital, Lord Lascelles said that of the 317 patients who were admitted to the wards last year, 107 were cured and 113 relieved, only 77 showed no improvement He expressed the hope that the institution would receive the means to undertake a thorough survey of the many mysterious and dangerous maladies connected with the nervous system

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Housing in Glasgow

I **WONDER** if any English town can show, on any serious scale, a parallel to the Glasgow " backlands " (This term is locally pronounced as if it were two words each of equal accent) A typical example is a four or five-story tenement facing the street with another similar tenement built perhaps 20 feet behind it The backland is approached through passages in the front blocks, the lower floors can never get direct sunlight and many of the rooms require artificial light all day The rapacity of the early builders was uncontrolled by the municipality or Government, and the population of Glasgow increased so rapidly that its housing and rehousing now present a gigantic problem At a summer school of social study held on the Gareloch, Dr A S MacGregor the medical officer of health for the city, said that in a group of streets recently surveyed 14 per cent of the two-apartment houses were found to be harbouring two families Some 3000 houses have been scheduled for demolition and the destruction of another 1000 is under consideration in view of their congestion dilapidation, or dampness In the older houses, especially in the east end of Glasgow, damp is very common

At a recent official inquiry Dr MacGregor stated that he had carefully studied the vital statistics of two of the scheduled areas He found that, while the city death-rate was 14 8 per 1000, the Coalhill district death-rate was 24 7, and the Rumford-street death-rate 24 5 For the city as a whole the respiratory death-rate was 2 7, for those two districts it was 6 For the city as a whole the infantile death-rate was 107 per 1000 births, for Coalhill-street it was 174, for Rumford-street, 138 In Glasgow the populations at risk in these areas are large enough to give a high value to those death-rates Usually, when such figures are adduced to justify a slum clearance scheme, the quantities are too small to be significant But Glasgow can show a long series of these housing-health studies, and the cumulative effect of the figures is strongly in favour of the view that the incidence of death and disease is a real function of overcrowding It has been held that the lower class of house attracts the feebler class of population and that the high death-rates associated with overcrowding are not due to mere aggregation but to natural selection of the weaker stocks It is difficult, however, to accept this comfortable doctrine

One fact brought forward by Dr A K Chalmers, the late medical officer of health for the city, seems never to have been adequately investigated—namely, that the populations of one-room, two-room, and three-room houses are in a state of perpetual flow up *and* down There is not a constant population in any one class of house Yet it is found that the leading death-rates and disease-rates vary inversely as the number of rooms In an over-crowded hospital ward we invariably get an increase of evil results due to mere aggregation for with overcrowding the " other conditions " necessarily change It is not unreasonable to expect the same ill-effects in over-crowded smaller houses where the hygienic conditions are almost always bad, especially in a great city. The problem is not one to be too dogmatic about, but I should expect medical officers of health generally to support the views implied in Dr MacGregor's evidence

Detection of Anthrax

An important practical point has been raised at the Aberdeen County Council In Scotland the English Board of Agriculture controls the contagious diseases of animals It was said that of three cases of suspected anthrax in animals diagnosed by a local veterinary surgeon two had not been confirmed by the Ministry of Agriculture's experts Insurance companies only paid on the verdict of the Ministry and, therefore, great hardship was inflicted on farmers if the local veterinary surgeon said an animal died of anthrax and the Ministry denied it. It was agreed that in future swabs be sent to the local authority's veterinary inspector. Whilst no time must be lost in investigating a case of anthrax, it should be possible to make arrangements both for local diagnosis and central confirmation where necessary.

Official Recognition of Research

It is worth noting that, during his research on spirochætal jaundice,[1] Dr. George Buchanan, in order to get direct access to his material, was appointed a Commissioner by the Scottish Board of Health, with power to make the necessary inquiries on the spot along with a medical officer of the Board. This is a good instance of how the work of the Medical Research Council's investigators can be correlated with administrative organisations.

The Empire Marketing Board has made a special grant of £2850 for the investigation of the food value of milk. An elaborate experiment is now going on under the direction of the Rowett Institute, Aberdeen, and a report will doubtless be published later in the year.

There is a good deal of discussion about the venereal diseases clauses in the Edinburgh Bill. The problem of how best to secure continued treatment is still unsolved. All that we can say at the moment is that the Edinburgh V.D. Department is one of the most successful in the country.

IRELAND

(FROM OUR OWN CORRESPONDENT.)

Medical Registration in the Free State

THE Medical Practitioners Bill passed through all its stages in the Dail last week, and will probably have been finally dealt with by the Senate this week. Mr. McGilligan, the Minister in charge, moved two amendments which improved the Bill. He met the case that had been made to him on behalf of the two Royal Colleges, and agreed to give them separate representation on the Medical Council. He also provided that a casual vacancy in the direct representation should be filled by election and not by cooption. Mr. T. Hennessy moved an amendment to increase the number of direct representatives on the Council from two to four. The Minister was unwilling to accept this, but stated that the nominees of the Executive Council would be representative of the profession. Mr. Hennessy's amendment was withdrawn and the Minister carried a fresh amendment increasing the number of nominees of the Executive Council from one to two.

There was some discussion in the Dail about the anomalous position produced by giving separate representation on the Council to the several constituent colleges of the National University, while leaving the University itself unrepresented, but the Bill has gone through without change in this respect. It is unfortunate that there was not more time for consideration in the Dail, and it is hoped that the Senate may be able to do something to clear up an illogical position which, if left uncorrected, may hamper the working of the Council. As the Bill now stands, the constitution of the Council is based on two apparently incompatible principles—namely, representation of licensing bodies, applied in the case of Dublin University, the two Royal Colleges, and the Apothecaries Hall; and representation of teaching bodies, applied in the case of the university colleges at Dublin, Cork, and Galway. Under later sections of the Bill the Council is empowered to report to the Executive Council on the inadequacy of examinations and on the inadequacy of courses of study. The Executive Council, on consideration of such report, may, if it think fit, order that such examination shall cease to be a qualifying examination, so that the college or body which is responsible for an inadequate course of study loses its right to grant a qualifying diploma. In the former instance the body subjected to such order shall, for the time being, lose its right to representation on the Council. It is difficult to see in what way these clauses apply to the constituent colleges of the National University. As they do not grant diplomas they cannot be penalised by the suspension of that power, and at any rate their right of sending representatives to the Council remains. If they offend the National University will be punished. One of these constituent colleges, that of Galway, is reported to have had only two entrants as medical students last winter session. It is clear that with so small an entry the continued existence of the school is in some doubt. It seems, however, that, even if the Galway school of medicine were closed, the College of Galway would, in the absence of further legislation, continue to send its representative to the Medical Council.

Registration of Dentists

The Dentists Bill, 1927, was introduced to the Dail last week, but the President has announced that it is not his intention to press it in the present session. It follows fairly closely the lines of the Medical Practitioners Bill, in providing for the establishment of a Free State Dental Board and the maintenance of a Dentists Register. The relations of the Free State Dental Board to the [British] Dental Board, and of the Free State Register to the Dentists Register, appear to be parallel to those set up in the medical sphere. The Free State Dental Board is to consist of nine members, appointed as follows: One by the Executive Council, three by the Medical Council, one by the persons in the Free State registered under Section 3 of the Dentists Act of 1921, and four by dentists in the Free State otherwise registered. The Board is concerned with registration and discipline only, and does not appear to have any concern with education. Moreover, it only inquires into charges of infamous or disgraceful conduct when these charges are brought before it by a university or college having power to grant licences to practise dentistry. The right of medical men on the Register at the date of passing of the Act to practise dentistry is preserved, but future practitioners have their freedom curtailed. It is provided that Section 41, which contains a general prohibition of dental practice by persons not on the Dentists Register, shall not operate to prohibit—

> The performance of any surgical operation in connexion with the tissues of the mouth or jaws, or the giving of any dental treatment, advice, or attendance in urgent dental cases by any registered medical practitioner.

This clause is so ambiguous as to be dangerous, and in its meaning seems to be an unwarrantable interference with the privilege of medical men to practise any branch of medicine or surgery they think fit. It may be just as well that the Bill is not to be pressed at present, and that further time should be given for consideration.

BERLIN

(FROM OUR OWN CORRESPONDENT.)

The Press and the Medical Profession

THE daily papers are becoming more and more inclined to publish photographs of medical men whose names are for some reason or other before the public, and at a recent meeting the Berlin Medical Society protested against this practice on the ground that it savours of advertisement. A resolution was unanimously adopted, charging members of the society to do their utmost to prevent newspapers from publishing their photographs and professional records. On the other hand, the Association of the German Press, which represents all the leading papers in Germany, resolved at its last meeting that its members shall henceforward refuse to publish advertisements promising medical attendance by letter, advertisements guaranteeing cures for disease such as tuberculosis, cancer and tabes, and advertisements recommending cures by astrology and other metaphysical methods It will be a serious blow to quackery if the newspapers carry out this recommendation

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[1] See THE LANCET, May 7th, p. 985.

Health of the German People.

In a report submitted to the Reichstag the Government states that the health of Germany has improved since 1924 The number of births has risen and the population is no longer decreasing In 1925 the live birth-rate was 20 6 per 1000, compared with 20 5 in 1924, it is unsatisfactory however to find that in the first nine months of 1926 in the larger cities for which reliable figures are already available, the rate was only 15 6 as against 16 4 in the same period in 1925 The general death-rate has fallen to 11 9 per 1000 being thus almost the smallest in Europe, but the infant mortality in Germany is much greater than in Denmark and Holland, the countries whose general death-rate is lowest Notwithstanding the housing shortage the mortality from tuberculosis has decreased in the larger towns During 1925 moreover, there were no epidemics of major importance The improvement in the public health is attributed to the arrangements for social relief and to the beneficial effect of sport

Surgery and Diabetes

Not long ago a paper dealing with operations upon diabetic patients was read by Dr Rosenberg before the Berlin Surgical Society Since the discovery of insulin he said, the mortality of these operations has decreased from 50 per cent to about 12 per cent The principal danger is from coma and infection In the Charlottenburg Hospital between 1919 and 1922 seven diabetic patients were operated on of whom three died from coma and one from septicæmia Between 1922 and 1926 operations were done on 35 diabetics and there were 11 deaths, six of the cases were dealt with in the early days of insulin, when the technique was not yet fully developed, but in the later ones there was not a single death from coma This good result was achieved by giving insulin in doses sufficient to remove sugar not only from the urine, but also (in excess) from the blood If preparation begins several days before operation the prognosis is hardly worse in diabetic than in normal subjects On the day of operation, and in the few days afterwards, it is necessary to give larger doses

Supply of Human Milk to Infants

In Magdeburg during the war the milk of mothers who had more than they needed was collected for the use of infants who were insufficiently fed The quantity of milk delivered was some 80 or 100 litres a month and the women were induced to deliver their milk by the offer of money and (what was then still more important to them) of food In 1922 the system had to be abandoned because of the financial condition of the country; but recently it has been reorganised in connexion with a maternity hospital A grant of M 5 per litre is made for the milk, whilst women of the better class who decline to accept money receive a certificate instead The daily quantity of milk sent in is about 3 litres

Hydrophobia in Germany

In 1924 2423 cases were reported in Germany of people being bitten by dogs suffering or suspected of suffering from rabies Of those bitten 41 developed rabies, as against 63 in the previous year Treatment at the Koch Institute in Berlin was given to 504 people, whilst 371 were dealt with at the Institute of Hygiene at Breslau Generally, cases of rabies are more frequent in the eastern provinces than in the west The death-rate of people treated at the above institute was 1 4 per cent in 1924 0 5 per cent in 1923 0 9 per cent in 1922 and 1 4 per cent in 1921 whilst for people who did not receive such treatment the death-rates were 8, 8 1, 10 2, and 7 3 per cent respectively

Nutrition and Fertility

The experience of the war suggests that nutrition has no influence on the incidence of multiple births The number of these births underwent no significant change between 1909 and 1921, which includes, of course, the period of starvation during the blockade, nor was any alteration observed in the general fertility although it is known that domestic animals whose food is supplied regularly reproduce themselves more quickly than wild animals of the same species

State Insurance in Germany

According to a statistical record of the German Insurance Office, 26,000,000 people in 1925 were compulsorily insured against accidents In 107 571 cases—7 per cent of which were fatal accidents—an insurance allowance was granted for the first time, the total amount being M 170 000,000 16 500,000 people were insured against sickness and old age and 200,000 pensions were granted for invalidity—apart from 50 000 allowances for widows and 40 000 for orphans The insurance offices themselves maintain 51 sanatoriums with 7161 beds for tuberculous patients and 47 sanatoriums with 5668 beds for other diseases Twenty million people are compulsory members of sick-clubs 9,500 000 cases of sickness being registered in 1925, compared with 7 500,000 in the year before The average duration of disability due to disease was 25 days in industrial and 23 days in agricultural workers

Agricultural Experiments with Iodine

The good results obtained with iodine in the prophylaxis and treatment of goitre have led to an attempt to increase the iodine-content of vegetable foods Experiments have been made at the agricultural institute of Hohenheim on the effects of adding iodide of potash to the Chile saltpetre used as a fertiliser but it has proved impossible to increase the amount of iodine in the plants intended for human consumption

New Light on the Death of Schiller

Dr Brauer states in an article in the *Zeitschrift fur Medizinische Chemie* that the death of the poet Friedrich Schiller was probably caused by a green wallpaper A piece of this wallpaper has recently been found and chemical examination shows that its colour was produced by Schweinfurt green a dye containing arsenic From correspondence between Schiller and Goethe it has been ascertained that it was Goethe who purchased the wallpaper for his friend and thus unwittingly caused his death In 1886 the use of Schweinfurt green for wallpapers was strictly prohibited in Germany

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AUTUMN MEDICAL COURSES AT CARLSBAD —The ninth series of International Medical Courses will be held at Carlsbad from Sept 18th–24th and free visas will be granted on application to persons attending these courses either as students or lecturers The newly built carbonic acid gas bath which makes the sixth bathing establishment contains ten cabins and a general room for dry baths besides nine cabins and a general room for cold water treatments, as well as spacious roof platforms for sun and air bathing and rest cures

DONATIONS AND BEQUESTS —Mrs Dowthwaite, of Aberdovey has given £1000 to the building fund of the Dolgelley and Barmouth College Hospital —Miss Violet E. Wills has given £18 000 to build, equip, and endow a nursing home at Partis College, Bath, for aged and infirm members of the institution in memory of her mother, Lady Wills —Mr Frank Harrison a timber merchant of Boston, Lincolnshire has given £20 000 to the endowment fund of the Boston Hospital —Mr Joshua H. Hoyle of Todmorden, has given £1000 to the Yorkshire Council of the British Cancer Campaign —The late Mr Henry Folland of Swansea left among other bequests £10 000 to the Swansea General Hospital and £1000 to the Swansea Institution for the Blind.—By will the late Mr John Lindon, of Oxton, Birkenhead left £1000 to Birkenhead and Wirral Children s Hospital and £1000 to Birkenhead Borough Hospital, in each case for the endowment of beds bearing his name.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

OPTICAL PRACTITIONERS (REGISTRATION) BILL

MR WEST RUSSELL, in moving the second reading of the Optical Practitioners (Registration) Bill on Friday, May 13th, said that while there might be a considerable difference of opinion in regard to some of the details there were, he thought, few hon Members who were not in complete accord with the broad principle upon which the Bill was based He believed that this was the only country where there was *no* legislation for the registration of opticians It might be that as a result of that legislation the people of the United States of America were probably the most bespectacled people in the world That was not because the eyesight of the people in the United States was more deficient than that of the people of this country, but it was because the people of the United States had long since realised that good eyesight was of enormous national importance He thought he was right in saying that at the present moment in this country among adults as well as among children there were more spectacles worn than was the case some years ago, not because the eyesight of the people was worse, but largely on account of the voluntary efforts on the part of opticians to cope with the problem The same principle as that which was embodied in this Bill was also embodied in many Acts of Parliament dealing, for example, with dentists, nurses, and midwives The principle of State registers had been in operation in regard to other professions for a considerable time and had met with great success He thought that it would be agreed that the work of opticians and the effect of it on the welfare of the country was a matter of national importance It was said on good authority that at the present moment in this country something like 15,000,000 people, or about one-third of the population, were suffering from a measure of defective eyesight, and on statistics which he believed were vouched for there were in various industries some 1,000,000 people, suffering from short sight, disease of the eye, or some defect of eye construction, while in the report last year by the Board of Education it was stated that in that year alone something like 16,000 school-children were treated for squint It was also stated that something like 21 8 per cent of school-children suffered from defective sight Until recently extraordinarily little was done to cope with this problem, and what had been done had been accomplished through the voluntary enterprise of the present Opticians' Council Under that Council, and the Council of the Worshipful Company of Spectacle Makers, they had a registration of something like 3500 opticians of whose qualifications some guarantee was given The course of training prescribed by the Council was very severe indeed It was a training which enabled opticians not only to test the eye and to provide the spectacles that were necessary, but it also equipped opticians with a knowledge of the construction of the eye, and of the matters pertaining to it

Ophthalmic Benefit

There was another aspect of this question which was of very great importance Under National Health Insurance there was what was known as ophthalmic benefit In 1923 when it was first provided the position of the approved societies was very perplexing There was no one to administer it and it was at that time that the Joint Council of Qualified Opticians was brought into being Through that Council the approved societies were provided with qualified men who were able to carry out the work of administering this benefit In 1923 something like £3000 was spent on ophthalmic benefit, in 1924, £17,000, in 1925, £24,000, and in October, 1926, there had been spent something like £63,000 This was a discretionary and not a statutory benefit, and one over which the Minister of Health had no control whatever In the first five years of the National Health Insurance the surplus for distribution as ophthalmic benefit was something like £32,000 a year There had been a second valuation and according to that there was a distribution of something like £420,000, which, taken over five years, amounted to a sum of £2,000,000 to be distributed for ophthalmic benefit At the moment there was no real authority established by law for the control and direction of this large sum, but sooner or later some body, such as it was hoped would be created under this Bill, would be brought in to coöperate with the Ministry of Health in the distribution of this ophthalmic benefit The object of this Bill was to register qualified opticians There was already a very complete voluntary register and the Council already exercised very considerable disciplinary powers, but its work would be infinitely more effective if a status was given to opticians similar to that which had been given to dentists and others There were a large number of quacks and vendors of spectacles who had neither the apparatus nor the ability to test sight, and naturally there was something of a vested interest there which would be affected by this Bill There were also a large number of opticians who were not qualified, but who had had a long experience of this kind of work They might have difficulty in satisfying the examination tests, but there was nothing in the Bill to prevent anyone who was carrying on the work of an optician from doing so All it would do was to enable the public to distinguish between men whose qualifications were guaranteed by a responsible body, and those whose qualifications could not be vouched for Power was given to this body to consider each case on its merits, and though certain unregistered opticians might not be able to pass the necessary examinations it was not by examination alone that their claim for registration would be decided While the Bill would tend to eliminate all quacks and mere sellers of spectacles, who constituted a very considerable danger, it would at the same time create and register a body of men with a standard of qualifications and able to give a guarantee to the general public that they were able to carry out such work as sight-testing and spectacle-making

Opposition to the Bill by Doctors

The most serious opposition to the Bill came, as one would expect, from the medical authorities Their opposition, as he understood it, was that a Bill of this kind would give to opticians a status that would rather suggest to the general public that the registered optician was capable and qualified to deal with all matters concerning the eyes Defective eyesight came under various heads First, there was the defect due to something in the construction of the eye, and that could readily be remedied by the provision of glasses Secondly, there was the defect due to some disease or trouble not centred in the eye at all, but somewhere in the constitution of the individual But the curious thing was that of this defective eyesight 95 per cent, it was said, was due entirely to error of refraction arising from some construction of the eye, and only 5 per cent was due to some disease or other cause The medical authorities, as he understood it, contended that the danger within that 5 per cent was so great that while they might have a highly qualified optician able to test the eyes and prepare a prescription for glasses, and to provide the glasses, he would not have the training necessary to enable him to diagnose any trouble that might arise either from disease of the eye or other weakness in the constitution While it was true that an optician might not be able to diagnose disease of the eye or the source of eye trouble, his training would enable him to detect it and to realise the cases that ought to be dealt with not merely by the provision of spectacles but ought to be passed on to some medical authority Hon Members must bear in mind that at the present moment a great deal of this work was being done by opticians and not by medical practitioners He quite realised that in moving the second reading of this Bill the promoters were in some difficulty There was a Departmental Committee sitting to inquire into the merits of this Bill But he thought it would be a mistake if the time that was devoted to the second reading was altogether lost He hoped that by the time this Bill reached the Committee stage the Departmental Committee would have reported

Organisations Supporting the Bill

MR ROY BIRD seconded the motion for the second reading of the Bill He said there were two organisations interested in the promotion of this Bill These were the British Optical Association and the Worshipful Company of Spectacle Makers The latter, which was one of the ancient City Guilds, had specialised in teaching their members and those who were not necessarily liverymen of that company the practice of optics These two organisations had joined together to form the Joint Council of Qualified Optical Practitioners The number of members registered under that body was well over 3000 On the other hand, the number of medical men who appeared on the register of the British Medical Association as ophthalmic surgeons, or as possessing some special qualifications to deal with the eyes, was only 700 That number had to be subdivided, because only about 25 per cent could really be described as ophthalmic surgeons Fifty per cent on the list were members of the medical profession who did not specialise in the treatment of diseases of the eye, but who had at some time held an appointment, or possibly written a paper, dealing with the eyes The remaining 25 per cent had no special qualification to deal with the eyes, or none which was shown in the Medical Register The medical profession claimed that 700 men could deal with the care of the eyesight of the whole of the population of this country Some very interesting figures were given during the inquiry of the Royal Commission on National Health Insurance as to the distribution of medical men over England In 558 towns there were only 397 qualified ophthalmic surgeons practising If they took ten towns in the list which were health resorts and ten towns which were industrial centres they found that there was a very small number of ophthalmic surgeons in the industrial centres and that they were congregated either in the West End of London or in the big provincial towns, or in famous health resorts Therefore, it was impossible to claim that the members of the medical profession who were qualified as ophthalmic surgeons could look after the whole community In a great many towns there was no ophthalmic surgeon at all but there were qualified opticians and he submitted that that was a very material consideration to bear in mind when they were considering what should be done in this matter

An Amendment

Dr VERNON DAVIES moved the following amendment "That this House declines to give a second reading to a Bill the subject matter of which is at the present time being investigated by a Departmental Committee" He said that he and the hon Members associated with him desired to show the House how in their opinion this was a bad Bill, and one which it would be impossible to work. In recent years there had been rather an epidemic of applications for registration by organisations or societies of practitioners He found from information that had been given to him that the Joint Council of Qualified Opticians consisted of a little over 3000 members Yet there were 30,000 persons in the United Kingdom who obtained the whole or part their living from practice as oculists He found that the organisations which held examinations and granted certificates were the College of Opticians, the National Association of Opticians, the Institute of Chemist Opticians, and the Joint Council of Qualified Opticians The Institute of Chemist Opticians very unfortunately or presumptuously said that the Joint Council of Qualified Opticians had no right to speak for the rest of the profession. They even went so far as to say that they themselves were the only qualified people by statute among the lot and the only people who had passed a statutory examination

Mr ROY BIRD The National Association of Opticians are supporting the Bill

Dr DAVIES said he had so far referred to only one organisation who disapproved of the Bill—namely, the Institute of Chemist Opticians They were 5000 in number But they had to look at the matter more or less from the point of view of public utility Was there a need for a Bill for the registration of opticians, and, if so, were these the proper people to bring the proposals forward, and was it in the public interest? He had indicated that the promoters of the Bill had not the unanimous approval of the profession They had not been able to get very much information that day as to what the qualifications of these gentlemen really were, or who decided as to the standard of the examinations An ophthalmic surgeon of very long experience had remarked to him that he had never in the course of his professional life known any patient go into a spectacle shop and come out without spectacles The medical profession had adopted a very definite attitude on this subject They contended that the eye was an important organ, that training for the treatment of eye diseases called for special and prolonged study, and that even when a man was qualified, if he wished to qualify as an eye surgeon he ought, after qualifying, to undertake special work in connexion with the eye

Mr H WILLIAMS How long does the ordinary medical student devote to the study of the eye?

Dr DAVIES said that speaking from memory the medical student attended a course of lectures, and in his time they had to make 30 practical attendances at the hospital He (Dr Davies) did not practise as an ophthalmic surgeon. To do that he would have been compelled after graduation to take a special course in the eye and would have had to hold a position as house surgeon in an eye hospital It would be found that practically all the ophthalmic surgeons in this country had had extended post-graduate training in that capacity It was said that this Bill would do little more than regularise what was the present practice He differed from that A body of unqualified men with a certain amount of training, which might be limited or otherwise, were asking for State approval of their profession by the grant of registration If they were successful the public would believe that because they had received the approval of Parliament they must be competent to examine and treat eyes That was a position which could not be maintained He found that one college gave its degree or diploma for 50 hospital attendances, of which 25 at least must be devoted to the anatomy, physiology and pathology of the eye These three important subjects had to be learned in 25 lectures Medical men said that that was an absolute impossibility, no matter how clever the student or how expert the lecturer

Mr COVE Is not one of the purposes of establishing registration to improve the qualifications of these people and generally to raise the standard?

Dr DAVIES said that was possibly so, and if a Bill were produced which merely set out definitely what the qualifications and training were to be it would have an additional claim on the attention of the House, but this Bill was vague and impracticable The suggested Board was to consist of 12 members, one of whom was to be nominated by the General Medical Council He did not think for a moment that the General Medical Council would nominate a member, as it would be outside their jurisdiction. Eight members were to be members of various optical societies, probably chosen by this joint board, but not giving any of the other organisations the right to be included In two or three years probably the whole registration would get into the hands of this small joint council to the detriment of the rest of the profession They knew that it had been the practice for a long time for most patients to go to opticians to have their eyes tested, and he believed that 90 per cent of the eyes examined had no disease at all It might, however, happen among the remaining small percentage that spectacles would be given to a man, or a drug would be put in his eye, which would do irreparable damage The importance of the matter was increased by the fact that optical benefits were given by the approved societies, and the Minister of Health had to be certain that insured persons were getting efficient optical benefits with a minimum of danger The great difficulty had been the shortage of ophthalmic surgeons and the very high fees charged which few insured persons could afford The House might devote attention to the point whether there was any scheme whereby the claims of the doctors and of the opticians could be met He said at once that if the opticians were satisfied with the purely refractive work there would not be a word to say against it; but the difficulty was that they claimed to be able to detect disease and to send on any case of disease for medical treatment But the question was whether they would send on such cases Sir George Berry, who would second the amendment, was an expert ophthalmic surgeon and he would probably tell the House from the medical point of view of the many dangers which were inherent in the present Bill

The Medical Point of View

SIR GEORGE BERRY said he seconded the amendment not because he had any personal interest in the matter, or any axe to grind, but because he was convinced that legislation on the lines proposed in the Bill would not be in the interests of the public He admitted at once that there was no reason why the public should not be assured of the services of properly qualified opticians In some way or other the public should be able to discriminate between the skilled optician and the less qualified or unqualified optician or unqualified maker of spectacles At present there were different societies who examined their members and from whom they got the right to put certain letters after their names which indicated that they had undergone a proper test according to the requirements of the society That ought to be sufficient in the public interest The need for optical benefit was now very much better realised than it was a generation or two ago At that time spectacles were considered to do harm to the eyes, and on that account even if they were required they were not used Now the pendulum seemed to have swung rather in the opposite direction, and spectacles for which there might be only the flimsiest pretence of necessity were worn by a great number of people In his experience, which was pretty considerable, he had never known a case where spectacles, however unsuitable, did any harm to the eye at all Considerable discomfort might be caused by unsuitable spectacles, but there was no actual danger of serious injury to the eyes

Lieut -Commander BURNEY The hon. Member has so much knowledge of this subject that I would ask him whether it would be true to say that if unsuitable spectacles were given to a person to correct, say, astigmatism, and he wore them for a year they would not increase the defect from which he was suffering?

SIR GEORGE BERRY said that without answering that specific question he did not agree that it would do any harm On the other hand, spectacles if they were suitable were capable of doing a great deal of good. In that way they could cure squint and double vision, they could prevent headaches, and they could to a certain extent arrest actual diseases of the eye That was the justification for the public having the services of opticians But that did not justify the provisions of this Bill which were calculated to mislead the public and give them a mistaken and therefore undesirable sense of security The public could not generally discriminate between ophthalmic benefit and optical benefit Ophthalmic benefit was very much more complicated, even if they accepted the definition of the term optometry which was given in the Bill Real ophthalmic benefit could be got now because under the National Insurance Act some of the friendly societies were referring their members to ophthalmic surgeons whose names had been given in a list from the Ministry of Health A skilled optician was perfectly competent to undertake the correction of optical defects, which was a simple matter, for the reason that it had been investigated by physicists, physiologists, and ophthalmic surgeons and involved a matter of skill which could be acquired in a few weeks or months But the point of real importance was that the eye was not only an optical instrument which, curiously enough, was less perfect in some respects than the instruments which were produced by human ingenuity, though in other respects, of course, it was more perfect—but the eye was also a percipient sense-organ of most complex structure and functions, and it was associated with other organs of the body It was for that reason that the eye was subject to so many defects and diseases The optician might be able to know of the existence of these diseases, and perhaps to discriminate in some cases between defects due to diseases of the eye and optical defects, but he could not do so without being liable to make a good many mistakes unless he had the full training of a medical man It was owing to the complexity of the eye that the medical curriculum of the universities and the different licensing bodies required the student to take up the study of diseases of the eye in the last six months of his course Before doing so he had to study physics, physiology, pathology, and medicine, and it was only after the completion of those studies that he was able to understand all the functions or organic diseases of the brain, the spinal cord, and the sympathetic nervous system Even then the doctor who wished to specialise in ophthalmic surgery had to undergo a very considerable training both in theory and in practice Without failing in appreciation of the well-qualified optician's work he felt for the reasons he had advanced that it would be wrong to proceed with this Bill

Defective Vision and Public Health

After further discussion,

SIR KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) said that they were unanimous that the subject matter of this Bill touched very closely indeed the question of public health They got a very fair indication of the extent of defective vision from figures which the Board of Education from time to time provided In 1913 it was estimated that not less than 10 per cent of the children of school age suffered from defective eyesight, while in many areas the percentage was as high as 25 per cent In 1920 the average proportion requiring treatment and observation among school-children was estimated at from 10 to 15 per cent, but in 1923 the figure was again found to be about 10 per cent of children at the school-leaving age In 1923 some 135,000 children were ordered spectacles The proportion of children with defective vision to the total number of children inspected in 1924 was 11 1 per cent and in 1925 the figure dropped to 10 2 Therefore the conclusion at which they might very fairly arrive was that the prevalence of defective sight among school-children was fairly constant and was about 10 per cent Last year there was a slight improvement, but he did not know whether they could attach any importance to the figures If they applied these figures to the population generally, and made certain allowances for age and occupation, they could roughly estimate the number of persons with defective sight in England and Wales as about 1 in 5 If that was so there were probably about 8,000,000 people in the country who were affected The general conclusion he should come to from the discussion that had taken place was that undoubtedly there was a case for something to be done, but there was considerable divergence of opinion as to the manner in which the problem should be approached, particularly from the point of view which had been advanced by the medical profession It was true that the doctors had urged with a certain amount of weight that there was an appreciable percentage of cases in which great harm might be done by an optician How far that argument was valid could only be ascertained by a full investigation of the facts The question which they had to face that day was whether in so difficult and complex a matter it was safe to give a second reading to this Bill, or whether it would not be better to leave it to the judgment and recommendation of the Departmental Committee He appealed to the promoters of the Bill under the circumstances to be content with having presented their case to the House and the country and leave it to the Departmental Committee which was a very excellent one The Chairman of the Committee told him that they were already making progress and were ready to come to an impartial judgment on the whole situation

MR RUSSELL said in view of the statement made by the Parliamentary Secretary to the Ministry of Health, which would be appreciated by the promoters of the Bill, he asked leave to withdraw the measure

DR DAVIES withdrew his amendment

Objection was taken to the Bill being withdrawn, and after some further discussion the motion for the second reading was put and negatived without a division.

HOUSE OF LORDS

THURSDAY, MAY 12TH.

SCIENTIFIC RESEARCH.

Lord STANLEY OF ALDERLEY called attention to the Report of the Industrial and Scientific Research Committee. Among the subjects which the Report dealt with, he said, were such things as the preservation of food It was highly desirable that they should not put such things into watertight compartments confining it to the investigation of the problem as it arose in this country He thought that the Committee had recognised the desirability of the question of the preservation and the maintenance of the quality of imported foodstuffs and other articles from the Dominions being investigated even more thoroughly than the easier problem of maintaining the purity and freshness of the foodstuffs produced in this country He would like to learn from the Lord President of the Council (the Earl of Balfour) something of the operations of the Committee of Civil Research, which had been set up by the Government last year It was made clear in the debate last year that the Committee of Civil Research was a link between the Dominions and the Mother Country.

The EARL OF BALFOUR (Lord President of the Council) said that their lordships had reason to be grateful to the noble lord for having called the attention of the House to one of the most important movements of the present day It was a movement which had grown steadily for many years The Committee of Civil Research was already doing an immense amount of very valuable and useful work One of the subjects which had quite recently been under consideration was the tsetse-fly which was one of the most embarrassing scourges of Africa It not only embarrassed agriculture and destroyed animal life, but it also destroyed human life It affected many of our Dependencies, it blasted with its unhappy curse many areas, and it did not fall naturally under the purview of any department For that reason it was exactly one of the subjects with which it was most desirable to deal through the Civil Research Committee Another subject under investigation was that of the native diet in Africa, and another was the Empire supply of quinine Hitherto quinine had been almost entirely derived, he believed, from certain of the Dutch colonies There was no reason that they knew of why that absolutely essential drug should not be cultivated elsewhere and that was being made the subject of inquiry by the Civil Research Committee The British Pharmacopœia, of which a new edition was urgently required, and which ought to be framed; and was being framed, as far as possible on lines suitable to the Empire, was also a subject which had come before the Committee That Committee had no executive powers and no power to spend money Any expenditure which their advice suggested was made on the responsibility of the Government as a whole and with the consent of the Treasury and the Chancellor of the Exchequer The House must not for a moment suppose that the activities of this country in the way of scientific research were exhausted either by the Committee of Industrial Research or by the Committee of Civil Research There was, for example, within the ambit of the Privy Council, the whole immense sphere of medical research Of that he would say nothing that day, but that alone, if the House wished to hear anything about it, would require a debate to itself The work of the Committee of Civil Research and of the Department of Scientific and Industrial Research was but a portion of the Government activities devoted to the great object of applying scientific discovery to the amelioration of the lot of mankind, and perhaps, he ought to add, to the power of one set of men to destroy another which, unfortunately, was also a subject of Government research in all countries of the world at this moment In addition to the eight departments which were already in existence for the purpose of carrying out research, there would have to be, unless he was greatly mistaken, another body created to deal with river pollution That was a subject which was rapidly beginning to cause considerable anxiety to the community from many points of view It was a problem of great difficulty and importance and he believed that it would never be adequately solved without scientific investigation When all had been done that could be done by legislation, and by rearranging, revivifying, or stimulating local authorities, unless they accompanied that improvement of machinery and organisation with an increased knowledge of how they were going to deal with the effluence of factories—of the new sugar factories, for instance—and of sewage, without destroying those industries, they would not satisfactorily solve the problem They had to find some means of safeguarding the needs of their industries while at the same time purifying the water from the point of view of the water-drinker and the fisherman. That was a big problem with which science must deal. The noble earl, in conclusion, asked their lordships to realise the enormous value of the practically unpaid work given by these great men of science to the solution of the problems which were put before them

Lord STANLEY OF ALDERLEY thanked Lord Balfour for the very full reply which he had given to his speech, and still more for the great encouragement which the noble earl's speech would give to scientists

HOUSE OF COMMONS.

WEDNESDAY, MAY 11TH

Playing Fields and Public Health.

Mr JOHN PALIN asked the Minister of Health whether his attention had been called to the shortage of playing fields in many of the cities and towns of the country, and whether, in the interests of public health, he would consider legislation to impose on local authorities the duty of making good this shortage —Mr CHAMBERLAIN replied I am aware that more playing fields are required, although a good deal has been done by local authorities in recent years They were given additional powers by the Public Health Act of 1925 and further legislation is not proposed

Small-pox and Vaccination.

Mr THURTLE asked the Minister of Health in how many of the cases of small-pox which have ended fatally this year vaccination had taken place —Sir KINGSLEY WOOD replied Since the reply given on this subject to the hon and gallant Member for Chelmsford (Lieut -Colonel Howard-Bury) on the 9th inst , a further death has occurred among patients suffering from small-pox Of the 28 cases which have ended fatally this year, 21 were unvaccinated at the time when they acquired infection, while seven had been vaccinated in infancy The ages of the latter at the time when they were attacked by small-pox were 22, 23, 44, 50, 54, 58, and 62 respectively

Mr HARRIS Is the right hon gentleman quite satisfied that the diagnosis proved conclusively that all these cases were small-pox ?

Sir KINGSLEY WOOD I have no reason to doubt the information I have received

Mr DAY Can the hon gentleman say whether any of these cases of small-pox were contracted abroad ?

Sir KINGSLEY WOOD That is another matter. The hon Member had better put down a question

Dr WATTS . Is the hon gentleman aware that the types of cases in the last few months have been more virulent than any we have had for some time ?

Sir KINGSLEY WOOD Yes, I have seen a statement to that effect

Rheumatism in the Navy

Sir BERTRAM FALLE asked the First Lord of the Admiralty the number of boys, second and first class, Royal Navy, at the training establishment, Shotley, who were admitted to sick-quarters and hospital suffering from rheumatism and kindred complaints during the years 1924, 1925, and 1926 , and the number of boys and men under 21 years of age who had been invalided from the Royal Navy owing to rheumatism during the years 1925 and 1926 —Mr BRIDGEMAN replied The following numbers of boys, second and first class, Royal Navy, at the training establishment, Shotley, were admitted to sick-quarters and hospital for "rheumatism" and kindred complaints In 1924, 20 , in 1925, 11 , in 1926, 13 The information asked for in the second part of the question is not readily available and its compilation would involve an expenditure of time and labour which I think my hon friend would not consider justified in the circumstances

Sir BERTRAM FALLE Does my right hon friend not think that some investigation should be made of these cases of rheumatism among first class boys ?

Mr BRIDGEMAN They are kept under observation and the figures do not go to show that there is any increase

Mr T WILLIAMS Would it not be easy to ascertain how many men under 21 have been invalided as a result of contracting rheumatism ?

Mr BRIDGEMAN I hope that the House will not insist on my giving these very detailed figures which may cause an increase in the estimates of my department

Mr T WILLIAMS Is not this a matter of such importance to the health of the men in the Royal Navy that we ought to have these facts and figures before us ?

Mr BRIDGEMAN But we have a medical department who are very diligent in this matter and there is no prima facie evidence that there is anything wrong

Mr T WILLIAMS Are we to understand that the medical officers are satisfied that there are no extraordinary circumstances causing this unfortunate disability ?

Mr BRIDGEMAN I certainly imagine that that is so I shall be only too glad to investigate these cases

Dr VERNON DAVIES Will the First Lord say how many of these cases were invalided out with heart disease ?

Mr BRIDGEMAN I require notice of that question

THURSDAY, MAY 12TH.

Difficulty in Summoning Public Health Nurses

Mr DAY asked the Minister of Health whether his attention had been called to the difficulty in summoning a public health nurse quickly in cases of emergency, as the majority of nurses were not subscribers to the telephone system , and would he consider installing telephones in the residences of all nurses engaged on this work —Mr CHAMBERLAIN replied The answer to the first part of the question is in the negative As regards the second part, this is a matter for the consideration of the bodies by whom the nurses are employed

Small-pox in England and Wales

Mr HARRISON asked the Minister of Health the total number of cases of small pox notified in England and Wales during the last 12 months, and the number of cases that proved fatal —Mr CHAMBERLAIN replied The number of cases of small-pox notified in England and Wales during the 52 weeks ended April 2nd, 1927, was 12,922 The number of deaths registered during the year ended March 31st, 1927, in respect of which small pox was stated on the medical certificate as the cause, or one of the causes, of death was 33 Of this number 32 were classified to small-pox and one to cancer

Mr HARRISON Will the right hon gentleman consider the desirability of making regulations to enable the port sanitary authorities to inquire of persons whether they have come from small-pox infected areas and if so, their destination in this country for the next fortnight after arrival ?

Mr CHAMBERLAIN The officers of my department are taking all steps which are practicable in the circumstances

Mr HARRIS Are the officers of the department perfectly satisfied that all these cases are correctly diagnosed as small pox ? Are not some of the cases supposed to be chicken-pox or some other disease ?

Mr CHAMBERLAIN There are people who would believe that a case of small-pox is anything but small-pox, but they do not include the officers of my department

Lieut -Colonel HOWARD-BURY Is not vaccination the only preventive ?

No answer was given

Mr GROVES asked the Minister of Health whether, in view of the fact that the small-pox cases removed to hospital from Hendon and Golders Green were originally reported as being very mild, he could throw any light on the fatal result in half of them —Mr CHAMBERLAIN replied I do not know to what reports the hon Member refers I am informed that the first of these cases was relatively mild, but that most of the others were severe

Birth Control

Mr THURTLE asked the Minister of Health if, in view of the resolution he had received from a recent national women's conference of one of the political parties represented in this House, in favour of birth control information being given in suitable cases at maternity centres, he proposed to reconsider his attitude on this matter —Mr CHAMBERLAIN replied I do not find that I have received any such resolution as that to which the hon Member refers, but in any case the passing of such a resolution at a party conference would not affect my decision, the reconsideration of which, as previously stated, depends upon an expression of opinion by Parliament

MONDAY, MAY 16TH

Indian Prisoners and Tuberculosis

Mr THOMAS WILLIAMS asked the Under Secretary of State for India whether he would give the names of the prisoners detained under the Criminal Law Amendment Act of 1925 who had, or were, suspected to be suffering from tuberculosis , and whether the Government had under consideration removing these prisoners to surroundings more conducive to the restoration of their health —Earl WINTERTON replied The two persons in question are Jiban Lal Chatterjee and Subhas Chandra Bose The former was removed to a sanatorium a month ago I hope to be in a position to make an announcement about Mr Bose in the course of the next two days

New Site for London University

Mr TREVELYAN asked the President of the Board of Education whether the University of London had arranged to purchase the Bloomsbury site from the Duke of Bedford , what the terms of purchase were , and how much was being provided by His Majesty's Government and how much from other sources —Mr R MCNEILL (Financial Secretary to the Treasury) replied The answer to the first part of the question is in the affirmative, but I am informed that no contract has yet been signed As the Chancellor of the Exchequer stated in November last, he promised in June, 1926, on behalf of His Majesty's Government, that they competent to undertake the correction of optical defects, which was a simple matter, for the reason that it had been investigated by physicists, physiologists, and ophthalmic surgeons and involved a matter of skill which could be acquired in a few weeks or months But the point of real importance was that the eye was not only an optical instrument which, curiously enough, was less perfect in some respects than the instruments which were produced by human ingenuity, though in other respects, of course, it was more perfect—but the eye was also a percipient sense-organ of most complex structure and functions, and it was associated with other organs of the body It was for that reason that the eye was subject to so many defects and diseases The optician might be able to know of the existence of these diseases, and perhaps to discriminate in some cases between defects due to diseases of the eye and optical defects, but he could not do so without being liable to make a good many mistakes unless he had the full training of a medical man It was owing to the complexity of the eye that the medical curriculum of the universities and the different licensing bodies required the student to take up the study of diseases of the eye in the last six months of his course Before doing so he had to study physics, physiology, pathology, and medicine, and it was only after the completion of those studies that he was able to understand all the functions or organic diseases of the brain, the spinal cord, and the sympathetic nervous system Even then the doctor who wished to specialise in ophthalmic surgery had to undergo a very considerable training both in theory and in practice Without failing in appreciation of the well-qualified optician's work he felt for the reasons he had advanced that it would be wrong to proceed with this Bill

Defective Vision and Public Health

After further discussion,

Sir **Kingsley Wood** (Parliamentary Secretary to the Ministry of Health) said that they were unanimous that the subject matter of this Bill touched very closely indeed the question of public health They got a very fair indication of the extent of defective vision from figures which the Board of Education from time to time provided In 1913 it was estimated that not less than 10 per cent of the children of school age suffered from defective eyesight, while in many areas the percentage was as high as 25 per cent In 1920 the average proportion requiring treatment and observation among school-children was estimated at from 10 to 15 per cent, but in 1923 the figure was again found to be about 10 per cent of children at the school-leaving age In 1923 some 135,000 children were ordered spectacles The proportion of children with defective vision to the total number of children inspected in 1924 was 11 1 per cent and in 1925 the figure dropped to 10 2 Therefore the conclusion at which they might very fairly arrive was that the prevalence of defective sight among school-children was fairly constant and was about 10 per cent Last year there was a slight improvement, but he did not know whether they could attach any importance to the figures If they applied these figures to the population generally, and made certain allowances for age and occupation, they could roughly estimate the number of persons with defective sight in England and Wales as about 1 in 5 If that was so there were probably about 8,000,000 people in the country who were affected The general conclusion he should come to from the discussion that had taken place was that undoubtedly there was a case for something to be done, but there was considerable divergence of opinion as to the manner in which the problem should be approached, particularly from the point of view which had been advanced by the medical profession It was true that the doctors had urged with a certain amount of weight that there was an appreciable percentage of cases in which great harm might be done by an optician How far that argument was valid could only be ascertained by a full investigation of the facts The question which they had to face that day was whether in so difficult and complex a matter it was safe to give a second reading to this Bill, or whether it would not be better to leave it to the judgment and recommendation of the Departmental Committee He appealed to the promoters of the Bill under the circumstances to be content with having presented their case to the House and the country and leave it to the Departmental Committee which was a very excellent one The Chairman of the Committee told him that they were already making progress and were ready to come to an impartial judgment on the whole situation

Mr **Russell** said in view of the statement made by the Parliamentary Secretary to the Ministry of Health, which would be appreciated by the promoters of the Bill, he asked leave to withdraw the measure

Dr **Davies** withdrew his amendment

Objection was taken to the Bill being withdrawn, and after some further discussion the motion for the second reading was put and negatived without a division

HOUSE OF LORDS

Thursday, May 12th

Scientific Research

Lord **Stanley of Alderley** called attention to the Report of the Industrial and Scientific Research Committee. Among the subjects which the Report dealt with, he said, were such things as the preservation of food It was highly desirable that they should not put such things into watertight compartments confining it to the investigation of the problem as it arose in this country He thought that the Committee had recognised the desirability of the question of the preservation and the maintenance of the quality of imported foodstuffs and other articles from the Dominions being investigated even more thoroughly than the easier problem of maintaining the purity and freshness of the foodstuffs produced in this country He would like to learn from the Lord President of the Council (the Earl of Balfour) something of the operations of the Committee of Civil Research, which had been set up by the Government last year It was made clear in the debate last year that the Committee of Civil Research was a link between the Dominions and the Mother Country

The **Earl of Balfour** (Lord President of the Council) said that their lordships had reason to be grateful to the noble lord for having called the attention of the House to one of the most important movements of the present day It was a movement which had grown steadily for many years The Committee of Civil Research was already doing an immense amount of very valuable and useful work One of the subjects which had quite recently been under consideration was the tsetse-fly which was one of the most embarrassing scourges of Africa. It not only embarrassed agriculture and destroyed animal life, but it also destroyed human life It affected many of our Dependencies, it blasted with its unhappy curse many areas, and it did not fall naturally under the purview of any department For that reason it was exactly one of the subjects with which it was most desirable to deal through the Civil Research Committee Another subject under investigation was that of the native diet in Africa, and another was the Empire supply of quinine Hitherto quinine had been almost entirely derived, he believed, from certain of the Dutch colonies There was no reason that they knew of why that absolutely essential drug should not be cultivated elsewhere and that was being made the subject of inquiry by the Civil Research Committee The British Pharmacopœia, of which a new edition was urgently required, and which ought to be framed; and was being framed, as far as possible on lines suitable to the Empire, was also a subject which had come before the Committee That Committee had no executive powers and no power to spend money Any expenditure which their advice suggested was made on the responsibility of the Government as a whole and with the consent of the Treasury and the Chancellor of the Exchequer The House must not for a moment suppose that the activities of this country in the way of scientific research were exhausted either by the Committee of Industrial Research or by the Committee of Civil Research There was, for example, within the ambit of the Privy Council, the whole immense sphere of medical research Of that he would say nothing that day, but that alone, if the House wished to hear anything about it, would require a debate to itself The work of the Committee of Civil Research and of the Department of Scientific and Industrial Research was but a portion of the Government activities devoted to the great object of applying scientific discovery to the amelioration of the lot of mankind, and perhaps, he ought to add, to the power of one set of men to destroy another which, unfortunately, was also a subject of Government research in all countries of the world at this moment In addition to the eight departments which were already in existence for the purpose of carrying out research, there would have to be, unless he was greatly mistaken, another body created to deal with river pollution That was a subject which was rapidly beginning to cause considerable anxiety to the community from many points of view It was a problem of great difficulty and *importance* and he believed that it would never be adequately solved without scientific investigation When all had been done that could be done by legislation, and by rearranging, revivifying, or stimulating local authorities, unless they accompanied that improvement of machinery and organisation with an increased knowledge of how they were going to deal with the effluence of factories—of the new sugar factories, for instance—and of sewage, without destroying those industries, they would not satisfactorily solve the problem They had to find some means of safeguarding the needs of their industries while at the same time purifying the water from the point of view of the water-drinker and the fisherman That was a big problem with which science must deal The noble earl, in conclusion, asked their lordships to realise the

Correspondence.

"Audi alteram partem "

MANIA AND DEPRESSION.

To the Editor of THE LANCET.

SIR,—Dr Snowden's paper entitled the Psychological Treatment of Mania and Depression in your current issue will be read with great interest, but on perusing the cases he quotes it seems to me that the title he uses is a misnomer Of the three cases described surely the first two would ordinarily be classed as examples of anxiety hysteria On the one hand, both present common symptoms of that disorder, and on the other, several facts which have been brought out by Dr. Snowden seem to differentiate them from mania, as that term is understood in psychiatry For example, of the first patient Dr Snowden says that his restless condition made him acutely miserable and fearful of insanity Neither of these symptoms is in any way characteristic of mania, in fact, taken together they would usually be considered to rule that diagnosis out of court The second patient's fear of suicide, to name only one symptom, is similarly highly incongruous with the classical manic syndrome If the third case be taken as an example of psychotic depression, as Dr Snowden obviously wishes us to do, is it not true that this condition usually terminates spontaneously in recovery, and is there then any criterion by which we can judge of the effect of treatment in a single case?

With regard to a medico-legal point; if certifiable patients need not be certified, but are to be sent to nursing homes, it seems only fair that we should carefully warn the matrons of these homes that, if they receive our patients, they are liable to prosecution, and *that possibly they may* be mulcted in heavy fines.

I am, Sir, yours faithfully.

T A ROSS

The Cassel Hospital for Functional Nervous Disorders,
Penshurst, Kent, May 14th, 1927

THE SURGERY OF HERNIA.

To the Editor of THE LANCET

SIR,—In reading the very interesting Hunterian lecture on Recent Advances in the Surgery of Hernia, by Mr. Ernest M. Cowell (THE LANCET, March 5th, p 479), I remembered seeing the late Prof O. Witzel, of Düsseldorf, do filigree operations for the closure of large herniæ when I visited his clinic (at that time at Bonn) in 1899 His teacher, Prof. Trendelenburg, had *some years earlier* (1890) closed the large aperture of a scrotal hernia by the insertion of a disc of fresh bone and later on *had repeated these* operations, using flaps of bone covered with periosteum His assistant, Goepel, began in 1897 to use silver filigree instead of bone plates, *but* he only published his results in the *Centralblatt für Chirurgie*, No 17, of 1900, after Witzel had described his method in No 10 of the same year. I was so struck by the utility of the method that I at once adopted it and did quite a number of these operations at the German Hospital in London, at first making my own filigrees and later on using ready-made filigrees sold by Otto Möcke of Leipzig In later years I have used more frequently free fascial grafts but even now sometimes find the filigrees very useful

I think Mr Cowell cannot be right in saying that Celsus practised herniotomy, as he was not himself a medical man *but* a lay writer who collected and published the medical knowledge of his time

I am, Sir, yours faithfully,

J P. ZUM BUSCH.

Kantonsspital Liestal (Switzerland), May 10th, 1927

THE MASTOID ANTRUM IN THE CHILD.

To the Editor of THE LANCET

SIR,—In their account last week (p 1024) of a case of facial paralysis of aural origin in a 7 weeks' infant, Dr Hobhouse and Mr Marshall write. "Considering the negligible size of the mastoid antrum at this age, the locality in which so large a quantity of pus was contained is rather difficult to determine." The mastoid or tympanic antrum at this age is not negligible *in size* On the *contrary*, it *is fully* developed at birth and is not only relatively, but actually, as large as the adult antrum The tympanic antrum of a 7 weeks' old infant will hold pus "in sufficient quantity to fill the external meatus" several times over —I am, Sir yours faithfully,

F PEARCE STURM, M Ch,

Aurist and Laryngologist, Leigh Infirmary, Lancashire
May 16th, 1927

THE RÖSE-GOTTLIEB METHOD OF MILK ANALYSIS

To the Editor of THE LANCET

SIR —In an article on dried milk in your issue of April 23rd (p 878) it is implied that the Röse-Gottlieb method for fat estimation gives results which are too low when used with dried milk, and could only be expected to give satisfactory results with liquid milk May I point out that if the essential conditions of the Röse-Gottlieb method are complied with—i e that the dried milk must be completely dissolved, and the reagents added in their proper order—the method is most reliable and exact for all milk products including dried milks I published a paper on the essential details in the *Analyst*, 1908 (p. 389) and have since repeated them in "Dairy Chemistry," second and third editions, and in the "Laboratory Book of Dairy Analysis," *second and third* editions.

I am, Sir, yours faithfully,

Nottingham, May 13th H DROOP RICHMOND, F I C.

THE PREVENTION OF SCARLATINAL NEPHRITIS A CORRECTION.

To the Editor of THE LANCET.

SIR,—In your report (THE LANCET, May 7th, p 971) of a contribution read by Dr. H Carter and myself before the Medical Section of the Royal Society of Medicine on April 26th on this subject, there is an error in the dosage stated—"0 90 g" should read "90 gr" a day This dose certainly represents the *minimum* amount of alkali *per diem* which has proved to be to some extent effective in preventing the development of albuminuria and nephritis in scarlet *fever* The incidence of these complications was reduced from 5 5 per cent in the control cases to 0 6 per cent on this *dose A larger* dose might possibly afford absolute protection but this point is still being investigated Until *further* evidence is obtained it is therefore impossible to state whether or not alkalis will prove to be completely protective and, if so, in what doses

I am, Sir, yours faithfully,

London, May 9th, 1927 A ARNOLD OSMAN.

THE ORIGIN OF LEUKÆMIA

To the Editor of THE LANCET.

SIR,—In an attempt to investigate the origin of leukæmia (lymphatic and myeloid) I have come across some evidence to connect it with (*a*) shock or nervous exhaustion, and (*b*) malaria *This may*, however, be a coincidence, and as the references in the literature of the subject are very scanty, I should be grateful to any of your readers if they could let me have notes of any cases in which either of these factors appeared to be concerned with the subsequent onset of leukæmia The length of the interval is important.

I am, Sir, yours faithfully,

Bedford-sq, W C, May 16th A. KNYVETT GORDON would be prepared within certain financial limits to ask Parliament to make provision for improved accommodation of the University, subject to approval by the Treasury of plans to be formulated by the Senate No official intimation has yet reached the Treasury, and I am at present unable to give any further information save that the amount which Parliament would be asked to provide towards the improved accommodation of the University would be approximately one-half the price paid by the Government for the Bloomsbury site, which was £425,000

Poor-law Relief

Mr NEIL MACLEAN asked the Minister of Health the number of people in receipt of Poor-law relief in England and Wales in 1925 and 1926 —Mr CHAMBERLAIN replied The total number of persons in England and Wales in receipt of Poor-law relief, including lunatics in asylums, casuals, and persons receiving domiciliary medical relief only, on the night of Jan 1st, in the years 1925 and 1926, was 1,205,267 and 1,439,810 respectively

Canned Goods and Preservatives

Mr HURD asked the Minister of Health what classes and quantities of canned goods were imported into this country which, because of the presence in them of preservatives, artificial colouring matter, or for other similar reasons, were barred by law for use in the countries of origin —Sir KINGSLEY WOOD replied The Preservative Regulations, which prohibit or restrict the addition of preservatives or colouring matters to foodstuffs, are so drawn as to prevent the importation of articles which do not conform to their requirements, and my right hon friend is not aware that any canned goods are imported into this country the sale of which is prohibited in the countries of origin for the reason stated in the question

TUESDAY, MAY 17TH

Small-pox in Durham

Mr BATEY asked the Minister of Health the number of persons who contracted small-pox in the county of Durham for the years 1924, 1925, and 1926 —Sir KINGSLEY WOOD replied The figures are as follows 1924, 20 cases , 1925, 1138 cases , 1926, 6645 cases

The Use of Tins as Milk Containers

Mr MACQUISTEN asked the Secretary of State for Scotland whether, as small farmers and other milk producers who sold their milk out of barrels were now being ordained to use tins, which were less sanitary in summer, and the use of which caused the loss and compelled them to incur the cost of reconstructing their carts, he would suspend the order compelling them to use tins until their existing equipment had to be replaced —Sir JOHN GILMOUR replied I am advised that wooden vessels are not more sanitary in summer than the metal vessels used for milk, and that the practice of using wooden vessels for the sale of milk is not common in Scotland The Milk and Dairies (Scotland) Order, 1925, which prohibits, from Jan 1st last, the use of wooden vessels for milk except in the case of buttermilk, was issued nearly two years ago, and so substantial notice has been given I see no reason to take any action to suspend or revoke the order on this point

Registration of Illegitimate Births

Mr HORE-BELISHA asked the Minister of Health whether he had now made inquiries into the administration of the Legitimacy Act, 1925 , and whether he had found it possible to ameliorate the present conditions and arrange that a certificate on re-registration should not be distinguishable from any ordinary birth certificate —Sir KINGSLEY WOOD replied My right hon friend has considered this matter carefully The arrangements for the re-registration of births under the Legitimacy Act, 1926, have been so framed as to render the entry indistinguishable from that of an ordinary legitimate birth wherever this has been possible without hardship to the parties, and it would not be possible to take any further measures without amending the whole of the general registration law I may add with reference to the particular points which the hon Member has in mind, that all entries of births registered after the expiration of 12 months are required to contain the words, " on the authority of the Registrar-General," and must bear the date on which they are registered

WELLCOME HISTORICAL MEDICAL MUSEUM —At 8 30 P M. on May 24th Mr Henry Wellcome will hold a conversazione at this museum for the Royal Anthropological Institute of Great Britain and Ireland Prof Elliot Smith, F R S , will give an address on the medical and magic nature of the anthropological collections in the museum

The Services.

ROYAL NAVAL MEDICAL SERVICE

Surg Lt -Comdr A Craig to be Surg -Comdr

ROYAL ARMY MEDICAL CORPS

Maj N T Whitehead is restd to the estabt

Capts to be Majs R R Thompson, W Russell, A J Hickey, G S Douglas, J B A Wigmore, E A P Brock, G R Grant, J LaF Lauder, F G Flood, J J Magner, J McP Mackinnon, H S Milne, G F Carr, J H Baird, F Harris, H R Sheppard, D W Beamish W K Campbell, F M Townsend, and P J S O'Grady

W G S Foster to be Lt (on prob)

A Nicolson to be Temp Lt

ARMY RESERVE OF OFFICERS

Maj A L Aymer relinquishes his commn and retains the rank of Maj

TERRITORIAL ARMY

2nd Lt H V Morlock, late Rifle Bde , to be Lt

TERRITORIAL ARMY RESERVE OF OFFICERS

Maj J Ramsay, from Active List, to be Maj

INDIAN MEDICAL SERVICES

Maj -Gen A Hooton officiates as Director-General, vice Maj -Gen T H Symons on leave Maj R V Martin to be Superintendent, Nasik Central Prisons on relief by Maj E E Doyle Lt G A S Howatson, Civil Surg , from Mirzapur to Shahjahanpur Lt -Col H C. Buckley, from Shahjahanpur to Saharanpur Lt -Col H R Nutt from Saharanpur to Allahabad Khan Bahadur Dr Tasaduq Husain, officiating Civil Surg to Banda Lt -Col H W Illius, Civil Surg to Benares Rai Bahadur Dr Sham Manohar Lal, officiating Civil Surg from Manda to Unao Rai Bahadur Dr Sarup Narain Mathur, Civil Surg , from Budaun to Fatehgarh Lt L V Jaensch, Civil Surg , from Garhwal to Gonda Lt -Col R W Anthony to officiate as Surg -Gen , vice Major-Gen A Hooton Dr P L Stallard, District Surg , Great Indian Peninsula Railway, to officiate as Principal Medical and Health Officer Maj M N Mehta to act as Civil Surg , Cochin Maj A J D'Souza to act as Resident Medical Officer, General Hospital, and Medical Officer in Charge of His Excellency the Governor's Bodyguard Dispensary Lt -Col W R J Scroggie to act as District Medical Officer, Superintendent, Medical School, and Medical Officer, Borstal School, Tanjore Major J B Vaidya to act as District Medical Officer, Guntur

The services of Maj R R M Porter have been placed temporarily at the disposal of the Government of Bihar and Orissa Lt -Col J C H Leicester has resigned his membership of the Bengal Legislative Council and Col Godfrey Tate has been nominated to succeed him

DEATHS IN THE SERVICES.

The death, from pleuro-pneumonia, is reported of Surg Lt -Comdr George Aubrey, R N , at Hong-Kong Appointed lieutenant in 1917, he saw active service during the war, and after being employed at Dunkirk in 1919 he went to Malta and was specialist in bacteriology and pathology at the hospital there In 1922 he joined the *Ajax* in the Mediterranean, in 1923 he was with the submarine *Adamant*, and in 1925 was attached to the surveying ship *Kellett* Promoted to Surg Lt -Comdr in 1923, he had passed for Surg -Comdr

AMBULANCE CHALLENGE SHIELD COMPETITION

The annual competition for the Territorial Army Ambulance Challenge Shield will be held at the Royal Army Medical Corps Headquarters, Upper Chorlton-road, Manchester, on Saturday, May 21st Teams from the following Territorial Army Field Ambulance units will compete for the trophy 125th (E Lancs), 128th (Wessex), 140th (County of London), 143rd (S Midland), who are the holders, 158th (Welsh), 164th (W Lancs), 167th (City of London), and 170th Cavalry

A MANCHESTER NURSES' HOME —On Saturday last Princess Mary laid the foundation-stone of the new nurses' home of the Manchester Royal Infirmary, and afterwards visited Booth Hall Infirmary, where she unveiled name-plates on the pavilions

EVELINA HOSPITAL FOR SICK CHILDREN.—There were 61,000 attendances of out-patients at this Southwark hospital last year; the in-patients numbered 700.

ROYAL INSTITUTE OF PUBLIC HEALTH.—The general and sectional programmes of the Institute's congress at Ghent, Belgium, from June 1st to 6th, have now been issued, and may be obtained from the hon. secretaries at 37, Russell-square, London, W.C. 1.

UNIVERSITY OF MANCHESTER.—About £5000 has been received from an anonymous donor to endow two post-graduate scholarships for research in biology.—The Dauntesey Medical Senior Scholarship has been awarded to W. W. Kay.

MILFORD SANATORIUM.—Lord Ashcombe, Lord-Lieutenant of Surrey, last week laid the foundation-stone of the central block of the Surrey County Sanatorium at Milford, near Godalming. The institution will accommodate 500 patients, and the cost, exclusive of the site, will be nearly £200,000.

LAMBETH GENERAL LYING-IN HOSPITAL.—Last year there were 991 in-patients, who contributed £1357 from their "maternity benefits." Under the terms of its lease the hospital is bound to build a new nurses' home which will cost £40,000; plans have been prepared for its erection, but the money has yet to be raised.

INSTITUTE OF HOSPITAL ALMONERS.—A meeting will be held at the Grotrian Hall, Wigmore-street, London, on Thursday, May 26th, at 5 P.M., when Sir John Rose Bradford, Sir Berkeley Moynihan, Sir Arthur Stanley, and Dr. A. C. E. Gray will speak on Hospital Social Service. A limited number of invitation cards may be had from the secretary of the Institute at 296, Vauxhall Bridge-road, S.W. 1.

DEATH UNDER ANÆSTHESIA.—The accidental use of a mixture of carbon dioxide and oxygen, in the proportion of 80 parts carbon dioxide to 20 parts oxygen, was responsible for a death under anæsthesia at St. Bartholomew's Hospital on May 11th. The mistake occurred when the anæsthetist, proposing to induce with gas and oxygen, turned on a cylinder containing carbon dioxide instead of the one containing nitrous oxide. At the inquest held on May 14th by Mr. Danford Thomas it was stated that the carbon dioxide cylinders are painted green down the sides, but black on the top, and the anæsthetist had been standing over the cylinders when he turned them on, and from this position failed to observe the distinguishing mark. The autopsy was performed by Sir Bernard Spilsbury, who said that the cause of death was asphyxia from carbon dioxide gas. All efforts to restore animation failed, including heart massage and artificial respiration. The verdict recorded was death from misadventure.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—Mr. J. Swift Joly will give a special clinical demonstration at St. Peter's Hospital on Wednesday, May 25th, at 2 P.M. On the same day, at 1 P.M., Mr. H. Neame will demonstrate at the Royal London Ophthalmic Hospital. On Thursday, May 26th, at 2.15 P.M., Dr. E. G. B. Calvert will give a clinical demonstration at the Royal Northern Hospital. All these demonstrations are open to medical practitioners without fee. From June 8th to 21st the Chelsea Hospital for Women will hold a special course in gynæcology (fee £5 5s.). A four weeks' afternoon course will be held at the Central London Ophthalmic Hospital from June 8th to July 2nd. Instruction will be given in the out-patient department, and there will be lectures on the more important diseases of the eye. An operative course will be arranged if desired. (Fee, £3 3s. for the clinical course and £5 5s. for the operative class.) From June 13th to 25th a course in diseases of children will be given at the Children's Clinic. Sessions will also be held at the Hospital for Diseases of the Heart, Bethlem Royal Hospital, Royal National Orthopædic Hospital, the Royal Waterloo Hospital, and elsewhere. (Fee £2 2s.) An afternoon course has been arranged at the Hospital for Diseases of the Skin, Blackfriars, from June 20th to July 1st. On each Tuesday cases of special interest will be shown. (Fee £1 1s.) From June 27th to July 9th the City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, E., will provide a special course. The entire practice of the hospital will be open to those enrolling. The Fellowship can arrange for practical courses in anæsthetics and obstetrics, and can also make arrangements for clinical assistantships in gynæcology. A general course of instruction is also provided at the associated hospitals, for which a separate programme is published. Copies of all syllabuses and of the *Post-Graduate Medical Journal* may be obtained from the Secretary of the Fellowship at 1, Wimpole Street, W.1.

Obituary.

NEVILLE THOROLD WOOD, M.D. DURH., M.R.C.P. LOND.

Dr. Neville Wood, who died on May 14th at the age of 69, was well known in London for his exceptional knowledge of British and foreign spas and of the conditions to which their methods of treatment are suited. He was educated at Eastbourne College and St. George's Hospital, and after qualifying as M.R.C.S. Eng. in 1883 continued his medical study at Paris and perfected a knowledge of French which afterwards served him well. He became a Member of the Royal College of Physicians of London in 1892 and graduated M.D. Durh. in 1899. The intervening years were occupied in private practice, but he continued to enlarge his hospital experience by a number of appointments which included clinical assistantships at the Chelsea Hospital for Women, the Victoria Hospital for Children, and the London Throat Hospital. Later he held a similar appointment at the Royal Westminster Ophthalmic Hospital, and at the time of his death he was consulting physician to the Kensington Children's Hospital and Dispensary. His special interests, however, were in medical hydrology, and his writing contributed a good deal towards the more intelligent use of climatic and other natural resources. He was one of the early members of the British Balneological and Climatological Society, founded in 1895, which was the first attempt to organise the medical profession at the health resorts and to stimulate the development of the science of waters and climates in this country. He subsequently held the office of President when this Society became a section of the Royal Society of Medicine, and on behalf of a committee of that section edited a volume entitled "Health Resorts of the British Islands" (1912) which was well received and was translated into French. Like the "Climates and Baths" of the Royal Medical and Chirurgical Society (1895) it contains articles of permanent value, especially those in which competent authorities have described the climates that distinguish the different sections of the British coasts, and undoubtedly it contributed to the new and comprehensive view of these localities as a medical and national asset.

"Neville Wood," writes a colleague, "was a strenuous worker. Like his own handwriting he was forcible, a little angular, and at times hard to comprehend, but he had generous impulses and a kind heart. When I saw him last after long illness and many operations he was still occupied with objects of interest and expatiating with pleasure upon the beauties of colour."

A man of varied talents, Dr. Wood enjoyed a good general practice in Kensington. He was at one time President of the West London Medico-Chirurgical Society and was a corresponding member of the American Clinical Climatological Society.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED MAY 7TH, 1927

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 337 (last week 277); scarlet fever, 1375; diphtheria, 793; enteric fever, 34; pneumonia, 884; puerperal fever, 35; puerperal pyrexia, 101; cerebro-spinal fever, 14; acute poliomyelitis, 6; encephalitis lethargica, 43; typhus fever, 1; dysentery, 5; ophthalmia neonatorum, 124. No case of cholera or plague was notified during the week. The single case of typhus fever was notified in Sunderland Port Sanitary District.

Cases of small-pox were notified from the counties of Derby 16, Durham 164, Middlesex 1 (Hendon), Northumberland 29, Nottingham 3, Stafford 1, Yorks East Riding 1

RADIOGRAPHY IN THE TREATMENT OF FRACTURES

To the Editor of THE LANCET

SIR,—Enclosed I am forwarding you a copy of a letter which the Todmorden Medical Society are submitting to the Medical Defence Union.

I am, Sir, yours faithfully,
C LEONARD WILLIAMS,
Hon Secretary, Todmorden Medical Society
Roomfield, Todmorden, May 16th, 1927

[ENCLOSURE]

DEAR SIR,—The Todmorden Medical Society views with apprehension the attitude of the Medical Defence Union as expressed in and by their recent circular letter adverting to radiography in the treatment of fractures

This circular letter must prejudice the case of any medical man who may be sued by an aggrieved patient, the subject of a fracture, if the practitioner has not obtained a radiogram, notwithstanding any circumstance which may have enabled the practitioner in the exercise of his discretion to dispense with such a radiogram, and notwithstanding any difficulties or dangers which might have been incurred in obtaining any such X ray report

This prejudice you have achieved by your letter throws on any defence the obligations of proving in any case as a matter of necessity that any such omission is justified either by the rightful discretion of the practitioner or by the special circumstances in which he acted, and establishes an atmosphere in which any such practitioner is pre-judged negligent until he has proved to the contrary For this legal disability medical men are indebted to the Medical Defence Union

Your letter, too, by laying down a principle of such a nature must in no small measure enlarge the discretion of your executive in denying liability to support a certain number of defences, and to this extent diminishes the liabilities for which practitioners, not without some reasonable justification, may consider themselves covered by you

Your policy also of creating amongst general practitioners a spirit of dependence in which they rely essentially on the ancillary medical services, re-acts adversely on the best interests of general practice

These ancillary services are invaluable in their place but the policy you have adopted is far wider than the specific recommendations you have made, and if pursued by making medical men into retail purveyors of X ray, biochemical, bacteriological, and other reports, must tend to diminish the interests of the general practitioner adversely, to the interests of the public

Situated as we are in Todmorden radiography is a possibility only where special circumstances indicate the necessity

Our attitude to the question is therefore the antithesis of yours which we claim is bad in principle and inapplicable to the circumstances of the area we serve and of many other localities, too, where the population is scattered and sufficiently far removed from the available special services to make their application always difficult, sometimes a danger.

We beg leave to submit the publication of your circular was an indiscretion, and beg to ask you what you propose doing in the circumstances, particularly with reference to your future policy, please

Yours faithfully,
(Signed) C LEONARD WILLIAMS,
Hon Secretary, Todmorden Medical Society
April 21st, 1927

⁂ The letter of the Todmorden Medical Society, which we are invited to publish, introduces a subject of importance It is a duty of the great majority of the medical profession to join one of the protection and defence associations, and the attitude of the Medical Defence Union has the sympathy of the London and Counties Medical Protection Association The difficulties, however, are recognised of absolute adherence to any rule that photographs must have been taken in certain cases Protection and defence corporations act strictly in the interests of their clients, though all will sympathise with the fine professional attitude taken up by the Todmorden Medical Society Where the practitioner can show that the difficulties in obtaining a safeguard (in the patient's interests as much as in his own) were material, a jury, when a quarrel arose, would certainly take that fact into consideration, but a jury might not regard the facts in the same favourable way if the safeguard had been withheld upon professional grounds It is common prudence for any practitioner, who has a case to deal with when an X ray photograph would throw light upon the circumstances, to suggest to the patient, or to those responsible for the patient, that such a procedure should be followed It need hardly be said that if the patient, directly or indirectly, is responsible for the omission to take the photographs, any charge of neglect brought against the practitioner falls to the ground —ED L

Medical News.

ROYAL COLLEGE OF PHYSICIANS OF LONDON —An extraordinary Comitia of the College was held on May 12th, when the following were admitted to the Fellowship —

Drs W S Paget Tomlinson, George Hall, D E Core H P Newsholme, A W Stott, Prof G H Monrad-Krohn Dr T H G Shore Maj V B Green Armytage Surgeon Rear Admiral R St G S Bond Drs M Davidson, T Izod Bennett, E Mapother, C F T East, and Prof H MacLean

Under By law XXXVIII *(b)* Dr Andrew Balfour and Sir Squire Sprigge

The Registrar reported the acceptance of the post of junior standing counsel to the College by Mr C Stafford Crossman, and that of delegate to the third Imperial Social Hygiene Congress by Dr S W Wheaton —A letter from the secretary of the Medical Research Council, regretting the inability to resume publication of *Medical Science Abstracts and Reviews*, was read —Dr L S T Barrett was appointed the delegate of the College to the thirteenth annual conference of the National Association for the Prevention of Tuberculosis

ROYAL COLLEGE OF SURGEONS OF ENGLAND —At a meeting of the Council held on May 12th, Sir Berkeley Moynihan, the President, in the chair, Mr C F Beadles and Sir Henry Gauvain were admitted to the Fellowship The diploma of Fellow was also conferred on Mr G F Gibberd and Mr A J Wrigley Mr E Miles Atkinson received the Jacksonian Prize for 1926 for his essay on the Pathology, Diagnosis, and Treatment of Abscess of the Brain Mr H C Malleson received the John Tomes prize for 1924–26 for his work on the Histology and Pathology of the Dental Tissues Mr R G Wilbond *signed the roll of* Begley students —The President reported that the new by-laws had been approved and signed by the Secretary of State for Home Affairs, the Lord Chancellor, and the Lord Chief Justice —Diplomas of M R C S were conferred upon 163 candidates (135 men and 28 women) whose names were published in THE LANCET, May 7th, p 1005

The *Jacksonian Prize* for 1927, which is of the value of £19 10*s*, will be awarded for a dissertation on the Pathology, Diagnosis, and Treatment of Bronchiectasis and Abscess of the Lung The subject for 1928 will be the Surgical Treatment of Pulmonary Tuberculosis *Candidates must be either* Fellows or Members of the College, and the essays must be submitted by Dec 31st Further particulars may be had from the secretary

UNIVERSITY OF LONDON —Mr Walter George Spencer, consulting surgeon to the Westminster Hospital, has been elected to the Senate as medical representative of Convocation Like all the other successful candidates for election, Mr Spencer was the nominee of the University of London Graduates' Association, of whose council he is a member

University College —An address on Lord Lister and the Romance of Surgery will be given at the College on May 23rd, at 5 30 P M, by Mr Raymond Johnson Dr A M H Gray will preside

St Mary's Hospital Medical School —There will be a distribution of prizes by Field Marshal Lord Allenby on Wednesday, June 8th, at 3 P M

London Hospital Medical College —On Wednesday, June 29th, at 3 P M, Lord Eustace Percy, M P., President of the Board of Education, will distribute prizes in the College Library

MEDICO-LEGAL SOCIETY.—An ordinary meeting of this Society will be held at 11, Chandos street, Cavendish-square, London, W 1, on Thursday, May 26th, at 8 30 P M, when Sir Lenthal Cheatle will read a paper on Some Medico-Legal Aspects in the Fracture of Bone A discussion will follow Members may introduce guests to the meeting on production of a member's private card

UNIVERSITY COLLEGE, Gower street, W C
Tuesday, May 24th —5 30 p m, Mr W H McLean (late Sudan Government Services) National, Regional and Town Development Planning (Third lecture)

ROYAL NORTHERN HOSPITAL, Holloway road, N (Intensive Course)
Monday, May 23rd —2 15 p m, Dr A Lisle Punch Some Points in the Diagnosis of Pulmonary Disease 3 15 p m, Mr W B Gabriel Notes on Diseases of the Rectum
Tuesday —2 15 p m, Dr R Wade Anæsthesia 3 15 p m, Mr L E Barrington-Ward Demonstration of Surgical Cases
Wednesday —2 15 p m, Dr H C Semon Common Skin Ailments, with Clinical Examples 3 15 p m, Dr Malcolm Donaldson The Uses of Radium in Gynæcology
Thursday —2 15 p m Dr E G B Calvert Modern Methods in Disorders of Digestion 3 15 p m, Mr F D Saner Some Aspects of Visceroptosis
Friday —2 15 p m (at Royal Chest Hospital), Dr A W Scott Some Points in the Diagnosis of Heart Disease 3 15 p m (at Royal Chest Hospital), Dr D Barty King Some Practical Points in the Diagnosis of Diseases of the Chest

LONDON SCHOOL OF DERMATOLOGY, St John's Hospital, 49, Leicester square, W C
Tuesday, May 24th —5 p m, Dr H MacCormac Treatment of Syphilis (2)
Thursday —5 p m, Dr K Sibley Electrotherapeutics

MANCHESTER ROYAL INFIRMARY, POST-GRADUATE COURSE
Tuesday, May 24th —4 15 p m, Dr R S Paterson Interpretation of X Ray Findings in Gastro intestinal Work
Friday —4 15 p m, Dr T Coogan Anæsthetics

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS
Friday, May 27th —3 30 p m (at the Royal Infirmary), Mr Kerr Cancer of the Larynx

Appointments.

Davis J H E L R C P & S Irel, has been appointed a Medical Referee under the Workmen's Compensation Act, 1925, for the districts of the Bangor, Conway, Llandudno and Colwyn Bay, and Llanrwst County Courts (Circuit No 29)

Walker, G B Wood, M B, B Chir Camb Resident Medical Officer to the Freemasons Hospital and Nursing Home, Chelsea

Certifying Surgeons under the Factory and Workshop Acts
Ferguson, D, M B, Ch B Glasg (Buckhaven, Fife),
Rothwell T W, M B Ch B Manch (Sedbergh, York)

Vacancies.

For further information refer to the advertisement columns

Birmingham, General Hospital —Asst Res Surg O £100
Birmingham, St Chads Hospital —Res M O £100
Bolingbroke Hospital, Wandsworth Common S W —Hon P Dermatologist Hon Asst P Neurology, Hon Ophth S Also H P At rate of £120
Bolton Infirmary and Dispensary —Two H S 's £150 Also Asst H S £100
Bolton Union Townleys Hospital, Farnworth —Second Asst M O £225
Bradford City of —Asst School M O £600
Cancer Hospital Fulham road, S W —H S At rate of £100
Chelsea Hospital for Women, Arthur street, S W —Jun H S At rate of £100
Cyprus —Specialist in Venereal Diseases £700
Evelina Hospital for Children, Southwark, S.E —H P At rate of £120
Federated Malay States —Radiologist $500–25–800 a month
General Lying-in Hospital, York road, Lambeth, S E —Res M O At rate of £100
Hastings Union, &c —Res M O, &c £450
Hong-Kong —M O H £750
Hospital for Sick Children, Great Ormond street, W C — R M O for Branch Hospital, Tadworth Court, Walton Heath, Surrey At rate of £250 Also H P and H S Each £50
Huddersfield Storthes Hall Mental Hospital, Kirkburton —Sen Asst M O £500
Keighley and District, Victoria Hospital —Res M O At rate of £180
Leeds Jewish Herzl-Moser Hospital —Res M O £50
London Hospital E —*Gynæcological and Obstetric Dept* —Res First Asst £300
Manchester Ancoats Hospital —H S At rate of £100
Manchester, Northern Hospital for Women and Children Cheetham Hill-road —Sen and Jun H S 's £130 and £100 respectively
Manchester Royal Infirmary —Dickinson Surgery Scholarship £75
Manchester Royal Manchester Children's Hospital —Sen M O £300
Middlesex Hospital, Ferens Institute of Otolaryngology —Bernhard Baron Research Studentship £300
Miller General Hospital for South-East London, Greenwich road S E —Anæsthetist 52 guineas
Newark Hospital —Res H S £200
Oxford Radcliffe Infirmary and County Hospital —H S and Obstet H P At rate of £120
Queen Mary s Hospital for the East End, Stratford, E —Hon Asst Phys Also H P, H S 's Obstet H S Also H P and Cas O
Rochester, St Bartholomew's Hospital —Res Surg O At rate of £225
Royal Free Hospital Gray's Inn-road W C —H Surgs H P 's, Cas O, &c Each £100 Also Asst Surg to Ear, Nose and Throat Dept
Royal Northern Hospital, Holloway, N —Asst Surg O £75
Royal Waterloo Hospital for Children and Women, Waterloo-road, S E —Hon Asst Ophth Surg
Royal Westminster Ophthalmic Hospital, King William street, Strand W C —Asst Surg
St John's Hospital for Diseases of Skin, Leicester square, W C —Clin Assts
Salisbury General Infirmary —Pathologist and Bacteriologist £500 Hon Asst Surg Also H S £150
Smethwick County Borough —Asst M O H £550
Stoke on-Trent City of —Deputy M O H, &c £750
Truro, Royal Cornwall Infirmary —H S £170
University College Hospital, Gower street, W C —Surg for Genito-Urinary Dis
Ware Park Sanatorium near Ware, Herts —Asst M O £350
West End Hospital for Nervous Diseases, Gloucester Gate, Regent s Park, N W —Sen H P and Jun H P At rate of £150 and £100 respectively
West Ham County Borough, Plaistow Fever Hospital —Second Asst M O £300
Wigan Infirmary —Third H S At rate of £150
Wolverhampton and Staffordshire Hospital —H S At rate of £150

The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Dursley, Glos

Births, Marriages, and Deaths.

BIRTHS

Davidson —On May 11th, at Beverley, Camberley, the wife of Dr F Churchill Davidson, *M C*, of a son

Livingston —On May 10th, at Osborne House Champion Hill S E, the wife of Alexander Livingston, M B, M D S, of a daughter

MARRIAGES

Jones—Blair —On May 12th at All Saints' Church, Rudby, Maurice Howard Jones M D to Marian Elspeth Sadler, youngest daughter of Mrs Blair and the late Mr P A F Blair, Hutton Rudby, Yorkshire

Nicholson—Marriott-Dodington —On May 10th, in London, George Nicholson M D, F R C S, to Helen, daughter of Brig -General and Mrs Marriot Dodington, of Bolham House, Tiverton

Sawyer—Wingfield —On April 20th at Uxbridge John Edmund Sawyer of Kidlington Oxf, to Lina Wingfield, M R C S, L R C P, of Brooklyn, West Drayton

DEATHS

Anderson —On May 12th at Castletown-road, West Kensington, Joseph William Townsend Anderson, retired Lieut Colonel I M S, F R C S, L R C P, L S A

Crawley —On April 25th, at New road Portsmouth Herbert Edward Crawley, M R C S Eng, L R C P Lond, aged 51 years

MacLaren —On May 10th, at Dunreggan, Elie, James Duncan MacLaren, M D, in his 95th year

Stephens —On May 17th, at the White House, Emsworth, Hants, Edith, the beloved wife of Lockhart Stephens

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

Hospitals Congress and Exhibition —The fourth annual congress of the Incorporated Association of Hospital Officers will be held at the Royal Horticultural Hall, Westminster, on Friday and Saturday, May 27th and 28th, under the presidency of Sir Arthur Stanley, when the subjects for discussion will be hospital policy, with particular reference to the raising of funds, and hospital planning and construction During the congress there will be an exhibition to illustrate up-to-date hospital construction equipment and domestic management This exhibition, the first of its kind in this country, will be opened by H R H Princess Arthur of Connaught at noon on Thursday, May 26th

(Hull), North Riding 3 (Middlesbrough), West Riding 51, Brecknock 2 (Brynmawr), Monmouth 66

Deaths —In the aggregate of great towns including London there were 4 (0) deaths from small-pox, 3 (0) from enteric fever, 57 (1) from measles, 4 (1) from scarlet fever, 34 (13) from whooping-cough, 25 (5) from diphtheria, 50 (11) from diarrhœa and enteritis under 2 years and 57 (7) from influenza The figures in parentheses are those for London itself

SMALL-POX IN LONDON —Six out of 11 cases of small-pox reported in the London area have now proved fatal, and the chairman of the Public Health Committee remarked in the London County Council on Tuesday that the disease in London was more severe than that prevalent in the Midlands and Northern area There could be little doubt, he added, that the outbreak was attributable to some undisclosed cause or causes imported from abroad All except two of these cases were notified to the Hendon Urban District Council, although two of them were discovered in a nursing home in Hampstead under treatment for supposed chicken-pox A single case had been reported in each of the metropolitan boroughs of Hampstead and Poplar The London County Council has agreed to distribute precautionary circulars where this seems advisable through its school organisation

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning

SOCIETIES

ROYAL SOCIETY, Burlington House, Piccadilly, W

Thursday, May 26th—4 30 P M *The following papers will be read* Helga Pearson On the Skulls of Early Tertiary Suidæ, together with an Account of the Otic Region in some other Primitive Artiodactyla (Communicated by Prof D M S Watson) A W Greenwood and F A E Crew Studies on the Relation of Gonadic Structure to Plumage Characterisation in the Domestic Fowl II The Developmental Capon and Poularde (Communicated by Prof R C Punnett.) F A E Crew The Laying Hen with Cock's Plumage Part III (Communicated by Prof R C Punnett) E J Salisbury On the Causes and Ecological Significance of Stomatal Frequency, with special reference to the Woodland Flora (Communicated by Prof F W Oliver) J W Trevan The Error of Determination of Toxicity (Communicated by Dr H H Dale) C K Drinker and E D Churchill A Graphite Suspension for Intravital Injection of Capillaries (Communicated by Dr H H Dale) F W R Brambell The Development and Morphology *of the Gonads of the Mouse Part I* The Morphogenesis of the Indifferent Gonad and of the Ovary (Communicated by Prof J P Hill) A S Parkes On the Occurrence of the Œstrous Cycle after X Ray Sterilisation III The Periodicity of Œstrus after Sterilisation of the Adult (Communicated by Prof J M Hill)

ROYAL SOCIETY OF MEDICINE, 1, Wimpole street, W

Monday, May 23rd —5 30 P M, ODONTOLOGY Annual General Meeting at the Royal College of Surgeons Lincoln's Inn Fields, W C 2 The reconstructed Odontological Museum will be opened by the President of the College, Sir Berkeley Moynihan Election of Officers and Council for 1927–1928

Tuesday —5 P M MEDICINE Annual General Meeting Election of Officers and Council

Wednesday —5 P M, COMPARATIVE MEDICINE Annual General Meeting, Election of Officers and Council *Paper* Dr M J Rowlands Rheumatoid Arthritis—is it a deficiency disease? The discussion on the paper will be opened by Prof R H Plimmer, followed by Prof J C Drummond

Thursday —8 30 P M UROLOGY Annual General Meeting, Election of Officers and Council *Paper* Prof Hans Wildbolz (Berne) The Indication and Execution of Prostatectomy

Friday —5 P M (Cases at 4 30 P M) DISEASE IN CHILDREN Annual General Meeting Election of Officers and Council *Presidential Address* Dr J D Rolleston The Section and its Work, 1908-1926 8 P M, EPIDEMIOLOGY AND STATE MEDICINE Annual General Meeting Election of Officers and Council *Paper*. Dr W S C Copeman The Prophylaxis of Measles, with a Suggested Scheme for Dealing with Epidemics

ST JOHN'S HOSPITAL DERMATOLOGICAL SOCIETY (Incorporating the LONDON DERMATOLOGICAL SOCIETY), 49, Leicester square, W C

Wednesday, May 25th —4 15 P M, Clinical Cases

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES, 11, Chandos street, Cavendish square, W

Friday, May 27th —8 30 P M, Dr G Riddoch The Prognosis and Treatment of Neurosyphilis A discussion will follow

MEDICO LEGAL SOCIETY

Thursday, May 26th —8 30 P M (at 11, Chandos street, Cavendish square, W) Sir G Lenthal Cheatle Some Medico Legal Aspects in the Fracture of Bone. A discussion will follow

SOCIETY OF SUPERINTENDENTS OF TUBERCULOSIS INSTITUTIONS

Saturday, May 21st —2 30 P M (at St Thomas's Hospital), Dr G T. Hebert Interpretation of Negatives in Chest Radiology

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole street, London, W

Monday, May 23rd, to Saturday, May 28th —FELLOWSHIP OF MEDICINE Wed, 2 P M, Mr Swift Joly, St Peter's Hospital, demonstration Wed, 1 P M, Mr H Neame, Royal London Ophthalmic Hospital, demonstration Thur, 2 15 P M, Dr E G B Calvert, Royal Northern Hospital, demonstration These demonstrations are free to members of the medical profession —ALL SAINTS' HOSPITAL, Vauxhall Bridge-road, S W Afternoons and evenings, demonstrations including cystoscopies Wed, special lecture —LONDON SCHOOL OF TROPICAL MEDICINE, Endsleigh-gardens, N W Tues, Dr Manson-Bahr Thurs, Dr Low lecture demonstrations at 2 P M —ROYAL FREE HOSPITAL, Gray's Inn-road, W C Wed, 5 P M, demonstration by Prof McIlroy —CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL, Gray's Inn road, W C Intensive Course —LONDON LOCK HOSPITAL, Dean street W Clinical Course — MAUDSLEY HOSPITAL Denmark Hill S E Special course in Psychological Medicine —INFANTS HOSPITAL, Vincent-square, S W Afternoon course special lectures and demonstrations —HAMPSTEAD GENERAL HOSPITAL, Haverstock Hill, N W Special Course for General Practitioners, 4 30 to 6 P M Medicine, Surgery and the Specialties

Further information from the Secretary

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith W

Monday, May 23rd —10 A M, Mr MacDonald Genito-Urinary Operations 2 P M, Dr Ironside Medical Out patients 5 P M, Mr Addison Inflammatory Conditions of Breast

Tuesday —10 A M, Medical Registrar Ward Demonstration 2 P M, Mr Addison Operations 2 P M, Mr. Sinclair Surgical Out patients

Wednesday —10 A M, Dr Owen Medical Diseases of Children 12 15 P M, Dr Burnford Medical Pathology. 2 P M, Dr Scott Pinchin Medical Out-patients 5 P.M, Mr Donald Armour Head Injuries

Thursday —10 A M, Dr Grainger Stewart Neurological Department 2 P M Mr Donald Armour Operations 2 P M Mr Bishop Harman Eye Department

Friday —10 A M, Dr Dowling Skin Department 11 A M, Dr Pritchard Modern Methods in Medicine. 2 P M, Mr Vlasto Throat, Nose and Ear Department

Saturday —9 30 A M, Dr Burnford Bacterial Therapy and Ward Visit 10 A M, Dr Owen Medical Diseases of Children

Operations Medical, Surgical and Special Out-patients daily, 10 A M to 5 P M, Saturdays, 10 A M to 1 P M

NORTH EAST LONDON POST-GRADUATE COLLEGE Prince of Wales's General Hospital, Tottenham, N

Monday, May 23rd —2 P M, Medical Cases in the Wards. 2 30 P M to 5 P M, Medical, Surgical, and Gynæcological Clinics Operations

Tuesday —2 30 P M to 5 P M, Medical, Surgical, Throat, Nose, and Ear Clinics Operations

Wednesday —2 30 P M to 5 P M, Medical, Skin, and Eye Clinics Operations

Thursday —11 30 A M, Dental Clinic 2 30 P M to 5 P M, Medical, Surgical, and Ear, Nose and Throat Clinics. Operations

Friday —10 30 A M, Throat, Nose, and Ear Clinics. 2 30 P M to 5 P M, Surgical, Medical, and Children's Diseases Clinics Operations 4 30 P M, Special Demonstration on Selected Cases of Nerve Diseases by Dr L R Yealland

KING'S COLLEGE, Strand, W C

Tuesday, May 24th —5 P M, Prof. R. J S McDowall Autonomic Nervous System (Last of four free lectures.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, Hunter street, W C

Monday, May 23rd —5 30 P M, Prof H Beckwith Whitehouse The Menstrual Function (Second lecture)

INSTITUTE OF PATHOLOGY AND RESEARCH, St Mary's Hospital, W

Thursday, May 26th —5 P M, Prof Hugh MacLean Insulin in the Treatment of Diabetes and Some Other Nutritional Disturbances

GUY'S HOSPITAL MEDICAL SCHOOL, London Bridge, S E

Friday, May 27th —5 30 P M, Prof E H Kettle Inflammation and Infection (Second of four free lectures) corridor, on the other hand, found in so many American hospitals, is not a feature of the plan which he would like to see followed, and in this respect the European hospitals appear to have the advantage in point of cheerfulness and health In comparing the vertical and horizontal systems of planning, there are points in favour of each, but on the question of extension (which is of primary importance to hospitals), there is little doubt the horizontal system is easier to handle. Mechanical efficiency is found most highly developed in America but reliance in mechanical means has certain drawbacks, and the case of mechanical ventilation may be given as an instance. The saving of labour however, is so important that attempts in that direction ought to be welcomed.

Oil-fuel installations are being adopted increasingly, as they result in the saving of labour caused by the handling of coke and ashes and they also have the advantage of greater cleanliness Finally, the question of architectural interest and beauty is now recognised to be just as important for hospitals as it is for banks, churches and private residences The general level of hospital design is now very high, and the fact that funds are invariably limited has not been altogether a disadvantage for it has often resulted in a dignified simplicity which expresses the character and purpose for which the building has been erected

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COLONIAL HEALTH REPORTS

BRITISH GUIANA

A REPORT prepared by Mr B H. Bayley, acting Assistant Colonial Secretary, on the affairs of this colony for the year 1925 has been issued The estimated population on Dec. 31st was 304,412 (154,543 males and 149,869 females) 10,197 births (5276 boys and 4921 girls) were registered during the year The birth-rate was 33·5 per 1000 of the population. The deaths were 7352—24·2 per 1000 The birth- and death-rates per 1000 of the estimated population of each of the several races representing the community were as follows —

Races	Birth-rate per 1000.	Death-rate per 1000
Europeans (other than Portuguese)	10·7	8·6
Europeans (Portuguese)	24·1	21·1
East Indians	37·3	27·7
Chinese	30·9	16·7
Aborigines	34·8	20·8
Blacks	29·7	23·1
Mixed races	37·7	18·2

The number of children who died under 1 year of age was 1582, or 155 per 1000 births, for 1925, as compared with 1606, or 165 per 1000 births in 1924 A new hospital built by the Demerara Bauxite Company on the Demerara River where the company's plant is situated, was formally opened in May. It serves a large number of people not only at Mackenzie, but also over a wide area of country, and can accommodate 80 patients. The Bauxite Company carries on a continuous campaign against malaria with satisfactory results and ankylostomiasis has already been eradicated from the company's labouring force.

The climate, although warm is distinctly cooler than that of other British colonies in tropical latitudes and Europeans and other Northern races enjoy consistently good health. The mean temperature throughout the year was 80·3° F. the mean maximum being 90° and the mean minimum 69°. The heat, which is greatly tempered by cooling breezes from the sea is felt most from July to October, owing to decreased force of these breezes There are annually two wet seasons, from April to the middle of August and during December and January The annual rainfall for the past 45 years averaged 91·65 inches in Georgetown. The rainfall in 1925 was 63·25 inches as compared with 83·54 in 1924 Sir Cecil Rodwell K.C M G, who succeeded Sir Graeme Thomson, K C B, as Governor, arrived in British Guiana and assumed the government of the colony on Nov. 20th

FIJI.

Mr. D R. Stewart, the acting Colonial Secretary, has furnished a report for the year 1925, in which he states that the general health was satisfactory, apart from an epidemic of typhoid fever in Suva, in which there were 350 cases and 28 deaths. Whooping-cough and influenza were prevalent throughout the colony, but there was very little dysentery and no other serious infectious disease. Continued progress was made in the campaign against ankylostomiasis. This disease is no longer a prevalent cause of debility of the Indian population. Practically the whole population has received one treatment, and those living in the wet districts, where it was formerly most prevalent, a second treatment. The Makogai Leper Asylum received during the year patients from Samoa, New Zealand, and Niue, and arrangements are complete to receive those from Tonga and the Cook Islands Over 5000 injections of salvarsan were given during the year, and secondary and tertiary yaws are steadily decreasing. The Lautoka hospital with 46 beds for East Indians and nine for Europeans was opened towards the end of the year The vital statistics remain satisfactory, except in so far as the death-rate of the Fijian population is concerned. The deaths during the year and the percentages of the respective classes of population were as follows Europeans 37, being 0·90 per cent.: Fijians 2012, being 2·2 per cent.; Indians 494, being 0·72 per cent , others (excluding Rotumans) 61, being 0·86 per cent. The births were as follows: Europeans 68, being 1·66 per cent.; Fijians 2856, being 3·22 per cent.; Indians 2258, being 3·31 per cent.: others (excluding Rotumans) 169, being 2·46 per cent. 1121 marriages were registered, being at the rate of 0·066 of the population. During the year 2437 persons arrived in the colony and 2457 departed Arrivals and departures were almost all residents in the colony There was no repatriation steamer for Indians during the year, as it was not found possible to arrange a charter The mean maximum temperature for the year was 82·7, and the mean minimum 70·6 The highest recorded was 91 on Feb 6th and the lowest 59·8 on July 3rd. Rain fell on 217 days during the year, with a total fall of 106·66 inches The greatest fall in 24 hours was 5·84 inches on Sept. 11th. The trade winds were exceptionally light and unreliable during the season. There were 21 thunder-storms

The islands of Fiji owe their origin in part to volcanic upheaval. There are, however, now no active volcanoes, but several of the high mountains were formidable craters in past times In several places hot springs are met with, those best known being situated at Savusavu, on the island of Vanualevu, on the Wadina River, north of Suva, and on several of the islands of the Lomaiviti group The highest altitude reached is Mount Victoria (4550 feet) Most of the islands are practically surrounded by coral reefs between which and the shore there is provided a well-protected waterway.

BARBADOS

Mr. J. B Howell, acting Colonial Secretary, is responsible for the report for 1925–26 just issued. It states that the population on Dec. 31st 1925, was estimated to be 162,211, but as this estimate depends on emigration and immigration figures, which experience has often shown to be seriously inaccurate, not much reliance can be placed upon it. The change in the immigration laws of the United States has put a stop to the rush of emigration to America as the annual quota now allowed is about 60, whereas in 1923 over 1700 persons emigrated to the States, and the number was tending to increase, as those who had settled there sent money to their relations and friends to enable them to join them. The birth-rate during the year was 34·85 per 1000, and the death-rate 29·46 The percentage of illegitimate births was 70·92 In January 1925 a Registration of Deaths Act came into force: there was no registration prior to that date. The following is a table of the principal causes of death in 1925: enteric fever, 84; bowel complaints including dysentery diarrhœa and enteritis 1123 (of whom 82 per cent. were children under three years old) pneumonia and bronchitis, 244 (84 per cent. being of children under three); kidney diseases 197; phthisis and other forms of tuberculosis 208, diseases peculiar to infancy, 520, old age 153; diseases of the heart, 380: syphilis 473 (62 per cent being children under three), and diseases of the nervous system, 335

Barbados enjoys natural and climatic advantages from a health standpoint such as can scarcely be found in any other tropical place. Malaria is unknown there are no extremes of heat or cold, the soil is well drained and the water-supply very good it is, moreover, constantly swept by the trade winds. In these circumstances it is an unusually healthy place of residence for all who are able to secure for themselves freedom from insanitary surroundings. Enteric fever and dysentery are however unfortunately common. The number of cases of enteric notified during the last five years has been: 1921, 3070; 1922, 1084 1923, 735; 1924, 762; 1925, 432 The ordinary type of enteric fever cases is of a mild character A Venereal Disease Clinic was established in 1922 at the General Hospital and it has been attended by steadily increasing numbers The cases treated in 1925 numbered 4317, as against 3083 in 1924 Clinics in other parts of the island are much needed The treatment of lepers at the asylum by the injection of moogrol &c., which was commenced in 1921, was continued during the year, and 15 inmates who had been medically boarded and declared to be cured were discharged from the asylum. In view of the recommendations of the British Empire Leprosy Relief Association for dealing with cases of leprosy, and as a result of a recent visit to the colony of Mr Frank Oldriene (secretary of the Association) a complete change in the outlook with regard to this problem and its treatment has taken place: and it is hoped that sufferers will be induced to come forward for treatment in their earlier stages, when they are more amenable.

Notes, Comments, and Abstracts.

FOREIGN HOSPITALS

ON May 16th Mr Lionel Pearson read a paper before the Royal Institute of British Architects on Recent Developments in Hospital Planning Abroad

His paper was based on visits paid to hospitals in Holland, Denmark, and Sweden and in the Eastern States of America In these countries, he pointed out, the economic effect of the war was not so severe as in England, so that their hospital development has been more continuous He found that European hospitals are rather on the lines adopted in this country—that is to say, the horizontal type of planning is the favourite, and a modified type of the pavilion system still holds its own, but in the United States there is a strong tendency to adopt the vertical type of planning, and the pavilion system is coming to be regarded as old-fashioned Some critics would say that in Europe the comfort of the patient is the first consideration, while in America the efficiency of the staff is put before everything else, but the two points of view seem to be of almost equal importance in hospital planning In all the countries there is a friendly rivalry to produce buildings which are up-to-date from the point of view of medical science and at the same time attractive to the patient And in his journeys he was cheered to find that some of the difficulties that beset hospital architects in this country are apparently universal, for instance he never met a sister who was really satisfied with the accommodation provided for linen, or found a type of window which admitted fresh air without causing a complaint from some patient in the ward

European Hospitals

Mr Pearson then described a series of hospitals which he had seen abroad The characteristics which may be said to be typically Dutch are cheerfulness, cleanliness, and common-sense, with solidity of construction and fresh air and light everywhere The colour schemes are usually very cheerful, and Holland may be said to have very much our ideals in hospital design The tendency in Denmark is to prefer large hospitals built in the pavilion system, the buildings generally being of ample dimensions, well built and well fitted internally The objection to this system is undoubtedly the length of the corridors and the amount of energy expended by the staff in conveying themselves and the food and stores over these considerable distances In addition to this the monotonous repetition of blocks is very depressing architecturally, and the size of the institution must rather eliminate the human element However, there are no doubt very great advantages to be gained in other ways, as the Danes are an extremely practical people and their hospitals have a very high reputation

In Sweden a distinct attempt has been made in hospitals recently built to make the buildings architecturally attractive, as is to be expected in a nation which is so artistically alive The small wards, and to some extent individual sanitation, are approaching the up-to-date American model, but there is a lack of finish in the detail and the constructional methods which falls much behind the best American work Perhaps in the cold northern climate there is not the same necessity for precautions as to ventilation, rounded angles and all the detail considered of such importance in England

American Methods

The industrial expansion in the United States of recent years has led to a great building activity, especially in the big cities, said Mr Pearson, and the number of hospitals which have been built during the last ten years is amazing Fortunately the leading architects are mostly located in New York and Chicago, and as they are most generous in imparting information the task of examining their design is much simplified Whilst in New York he was introduced to Dr Goldwater, the Director of Mount Sinai Hospital, and one of the leading hospital consultants in America, and he came to realise what an important part these consultants play in the hospital business in the States, acting as they do as liaison between the architectural and medical professions The coördination of specialists is one of the successful features of American practice, and the result is that before the building is begun the plans are settled in great detail, and the result is speed and efficiency in the erection

As the great majority of the people of the Eastern States live in cities, the city hospital is the most usual type, and the multi-storeyed hospital is the most popular just now, following the line of the office building, hotel, or apartment house This has led to the vertical type of planning, with the elevator, the laundry chute, and various other labour-saving devices playing a leading part in the construction The long corridors of the European hospital are considered quite out of date, and one American visitor remarked after seeing one of our hospitals that he hoped the staff were fitted with roller skates The concentration which results from the vertical plan certainly simplifies the problem of the heating, lighting, plumbing, and other services There is also the element of what must be called advertisement (for want of a better word), as the high building is never out of sight and out of mind

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The wards are now in much smaller units than formerly—16 beds being the maximum, and these are frequently divided by glazed screens into bays of four beds The single-bed ward is becoming increasingly the fashion, though an expert has calculated that only 30 per cent of the patients in an ordinary hospital really require them The nurses' station is either in a glazed enclosure overlooking the ward, or else open to the corridor commanding the approach to the ward The diet kitchen is centrally placed, and it may be noted that the use of refrigerators is general, and "the larder facing north" is not required Opening off the corridor are linen stores, pails and brooms, &c, and all the usual accessories, including the very important flower-room, with a sink and shelves The solarium is either at the end of the ward or a loggia provided on each floor for the use of patients, leaving the ward clear of balconies, and at the top of the building a comfortably furnished sun room is provided with French windows opening on to the "deck" over wards below

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Some Conclusions

After describing nine large hospitals in the United States Mr Pearson reviewed his impressions It is difficult, he said, to arrive at any very definite conclusions from a survey which includes countries of greatly different climate and conditions, but there are some tendencies which are marked everywhere The large ward of 25 or 30 beds seems to be a thing of the past, and smaller units are the rule—16 beds fairly frequent, but 12 beds usually preferred The number of rooms allocated to private and semi-private use is the most marked feature of the present-day planning, though naturally less marked in Europe than in America The individual sanitation which accompanies it in the latter country is perhaps rather overdone, it must mean great expense in the cost of plumbing and fixtures and entail a considerable amount of labour in the running of the hospital, but the provision of hot and cold water in private rooms, and rooms for nurses and staff is of great advantage, as the hotels are finding in all countries

The cross-ventilated lobby is no longer insisted on to the same extent, partly owing to the confidence felt in modern plumbing and partly on the ground of cost The central corridor, on the other hand, found in so many American hospitals, is not a feature of the plan which he would like to see followed, and in this respect the European hospitals appear to have the advantage in point of cheerfulness and health In comparing the vertical and horizontal systems of planning, there are points in favour of each, but on the question of extension (which is of primary importance to hospitals), there is little doubt the horizontal system is easier to handle Mechanical efficiency is found most highly developed in America, but reliance in mechanical means has certain drawbacks, and the case of mechanical ventilation may be given as an instance The saving of labour, however, is so important that attempts in that direction ought to be welcomed

Oil-fuel installations are being adopted increasingly as they result in the saving of labour caused by the handling of coke and ashes, and they also have the advantage of greater cleanliness Finally, the question of architectural interest and beauty is now recognised to be just as important for hospitals as it is for banks, churches, and private residences The general level of hospital design is now very high, and the fact that funds are invariably limited has not been altogether a disadvantage, for it has often resulted in a dignified simplicity which expresses the character and purpose for which the building has been erected

COLONIAL HEALTH REPORTS

BRITISH GUIANA

A REPORT prepared by Mr B H Bayley, acting Assistant Colonial Secretary, on the affairs of this colony for the year 1925 has been issued The estimated population on Dec 31st was 304,412 (154,543 males and 149,869 females) 10,197 births (5276 boys and 4921 girls) were registered during the year The birth-rate was 33 5 per 1000 of the population. The deaths were 7352—24 2 per 1000 The birth- and death-rates per 1000 of the estimated population of each of the several races representing the community were as follows —

Races	Birth-rate per 1000	Death rate per 1000
Europeans (other than Portuguese)	10 7	8 6
Europeans (Portuguese)	24 1	21 1
East Indians	37 3	27 7
Chinese	30 9	16 7
Aborigines	34 8	20 8
Blacks	29 7	23 1
Mixed races	37 7	18 2

The number of children who died under 1 year of age was 1582, or 155 per 1000 births, for 1925, as compared with 1606, or 165 per 1000 births in 1924 A new hospital built by the Demerara Bausite Company on the Demerara River, where the company's plant is situated, was formally opened in May It serves a large number of people, not only at Mackenzie, but also over a wide area of country, and can accommodate 80 patients The Bausite Company carries on a continuous campaign against malaria with satisfactory results and ankylostomiasis has already been eradicated from the company's labouring force

The climate, although warm, is distinctly cooler than that of other British colonies in tropical latitudes and Europeans and other Northern races enjoy consistently good health The mean temperature throughout the year was 80 3° F, the mean maximum being 90° and the mean minimum 69° The heat, which is greatly tempered by cooling breezes from the sea, is felt most from July to October, owing to decreased force of these breezes There are annually two wet seasons, from April to the middle of August and during December and January The annual rainfall for the past 45 years averaged 91 65 inches in Georgetown The rainfall in 1925 was 63 25 inches, as compared with 83 54 in 1924 Sir Cecil Rodwell, K C M G, who succeeded Sir Graeme Thomson, K C B, as Governor, arrived in British Guiana and assumed the government of the colony on Nov 20th

FIJI.

Mr D R Stewart, the acting Colonial Secretary, has furnished a report for the year 1925, in which he states that the general health was satisfactory, apart from an epidemic of typhoid fever in Suva, in which there were 350 cases and 28 deaths Whooping-cough and influenza were prevalent throughout the colony, but there was very little dysentery and no other serious infectious disease Continued progress was made in the campaign against ankylostomiasis This disease is no longer a prevalent cause of debility of the Indian population Practically the whole population has received one treatment, and those living in the wet districts, where it was formerly most prevalent, a second treatment The Makogai Leper Asylum received during the year patients from Samoa, New Zealand, and Niue, and arrangements are complete to receive those from Tonga and the Cook Islands Over 5000 injections of salvarsan were given during the year, and secondary and tertiary yaws are steadily decreasing. The Lautoka hospital with 46 beds for East Indians and nine for Europeans was opened towards the end of the year The vital statistics remain satisfactory, except in so far as the death-rate of the Fijian population is concerned The deaths during the year and the percentages of the respective classes of population were as follows Europeans 37, being 0 90 per cent, Fijians 2012, being 2 2 per cent, Indians 494, being 0 72 per cent, others (excluding Rotumans) 61, being 0 86 per cent. The births were as follows Europeans 68, being 1 66 per cent, Fijians 2856, being 3 22 per cent, Indians 2258, being 3 31 per cent., others (excluding Rotumans) 169, being 2 46 per cent. 1121 marriages were registered, being at the rate of 0 066 of the population During the year 2437 persons arrived in the colony and 2457 departed Arrivals and departures were almost all residents in the colony There was no repatriation steamer for Indians during the year, as it was not found possible to arrange a charter The mean maximum temperature for the year was 82 7, and the mean minimum 70 6 The highest recorded was 91 on Feb 6th, and the lowest 59 8 on July 3rd Rain fell on 217 days during the year, with a total fall of 106 66 inches The greatest fall in 24 hours was 5 84 inches on Sept. 11th. The trade winds were exceptionally light and unreliable during the season There were 21 thunder-storms

The islands of Fiji owe their origin in part to volcanic upheaval. There are, however, now no active volcanoes, but several of the high mountains were formidable craters in past times In several places hot springs are met with, those best known being situated at Savusavu, on the island of Vanualevu, on the Wadina River, north of Suva, and on several of the islands of the Lomaiviti group The highest altitude reached is Mount Victoria (4550 feet) Most of the islands are practically surrounded by coral reefs, between which and the shore there is provided a well-protected waterway

BARBADOS

Mr J B Howell, acting Colonial Secretary, is responsible for the report for 1925–26 just issued It states that the population on Dec. 31st, 1925, was estimated to be 162,211, but as this estimate depends on emigration and immigration figures, which experience has often shown to be seriously inaccurate, not much reliance can be placed upon it The change in the immigration laws of the United States has put a stop to the rush of emigration to America, as the annual quota now allowed is about 60, whereas in 1923 over 1700 persons emigrated to the States, and the number was tending to increase, as those who had settled there sent money to their relations and friends to enable them to join them The birth-rate during the year was 34 85 per 1000 and the death-rate 29 46 The percentage of illegitimate births was 70 92 In January, 1925, a Registration of Deaths Act came into force there was no registration prior to that date The following is a table of the principal causes of death in 1925 enteric fever, 84, bowel complaints, including dysentery, diarrhœa, and enteritis, 1123 (of whom 82 per cent were children under three years old), pneumonia and bronchitis, 244 (84 per cent being of children under three), kidney diseases, 197, phthisis and other forms of tuberculosis, 208 diseases peculiar to infancy, 520, old age, 153, diseases of the heart, 380, syphilis 473 (62 per cent being children under three), and diseases of the nervous system, 335

Barbados enjoys natural and climatic advantages from a health standpoint such as can scarcely be found in any other tropical place Malaria is unknown, there are no extremes of heat or cold, the soil is well drained, and the water-supply very good, it is, moreover, constantly swept by the trade winds In these circumstances it is an unusually healthy place of residence for all who are able to secure for themselves freedom from insanitary surroundings Enteric fever and dysentery are, however, unfortunately common The number of cases of enteric notified during the last five years has been 1921, 3070, 1922 1084, 1923, 735, 1924, 762, 1925, 432 The ordinary type of enteric fever cases is of a mild character A Venereal Disease Clinic was established in 1922 at the General Hospital, and it has been attended by steadily increasing numbers The cases treated in 1925 numbered 4317, as against 3085 in 1924 Clinics in other parts of the island are much needed The treatment of lepers at the asylum by the injection of moogrol, &c, which was commenced in 1921, was continued during the year, and 15 inmates who had been medically boarded and declared to be cured were discharged from the asylum In view of the recommendations of the British Empire Leprosy Relief Association for dealing with cases of leprosy, and as a result of a recent visit to the colony of Mr Frank Oldriene (secretary of the Association) a complete change in the outlook with regard to this problem and its treatment has taken place, and it is hoped that sufferers will be induced to come forward for treatment in their earlier stages, when they are more amenable

Notes, Comments, and Abstracts.

FOREIGN HOSPITALS.

ON May 16th Mr Lionel Pearson read a paper before the Royal Institute of British Architects on Recent Developments in Hospital Planning Abroad

His paper was based on visits paid to hospitals in Holland, Denmark, and Sweden and in the Eastern States of America In these countries, he pointed out, the economic effect of the war was not so severe as in England, so that their hospital development has been more continuous He found that European hospitals are rather on the lines adopted in this country—that is to say, the horizontal type of planning is the favourite, and a modified type of the pavilion system still holds its own, but in the United States there is a strong tendency to adopt the vertical type of planning, and the pavilion system is coming to be regarded as old-fashioned Some critics would say that in Europe the comfort of the patient is the first consideration, while in America the efficiency of the staff is put before everything else, but the two points of view seem to be of almost equal importance in hospital planning In all the countries there is a friendly rivalry to produce buildings which are up-to-date from the point of view of medical science and at the same time attractive to the patient And in his journeys he was cheered to find that some of the difficulties that beset hospital architects in this country are apparently universal, for instance, he never met a sister who was really satisfied with the accommodation provided for linen, or found a type of window which admitted fresh air without causing a complaint from some patient in the ward

European Hospitals

Mr Pearson then described a series of hospitals which he had seen abroad The characteristics which may be said to be typically Dutch are cheerfulness, cleanliness, and commonsense, with solidity of construction and fresh air and light everywhere The colour schemes are usually very cheerful, and Holland may be said to have very much our ideals in hospital design The tendency in Denmark is to prefer large hospitals built in the pavilion system, the buildings generally being of ample dimensions, well built and well fitted internally The objection to this system is undoubtedly the length of the corridors and the amount of energy expended by the staff in conveying themselves and the food and stores over these considerable distances In addition to this the monotonous repetition of blocks is very depressing architecturally, and the size of the institution must rather eliminate the human element However, there are no doubt very great advantages to be gained in other ways, as the Danes are an extremely practical people and their hospitals have a very high reputation

In Sweden a distinct attempt has been made in hospitals recently built to make the buildings architecturally attractive, as is to be expected in a nation which is so artistically alive The small wards, and to some extent individual sanitation, are approaching the up-to-date American model, but there is a lack of finish in the detail and the constructional methods which falls much behind the best American work Perhaps in the cold northern climate there is not the same necessity for precautions as to ventilation, rounded angles and all the detail considered of such importance in England

American Methods

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Chadwick Lecture

ON THE

TEACHING OF INDUSTRIAL MEDICINE.

Delivered in London on May 3rd

BY SIR THOMAS LEGGE, C B E , M D OXF , D P H ,

LATE SENIOR MEDICAL INSPECTOR OF FACTORIES TO THE HOME OFFICE.

[THE lecturer began by referring to a diagram showing the medical services coming into relation with factories and workshops numbering together some 300,000 and employing over 5,000 000 persons Were docks mines, quarries, and railways added, the total would be increased to 7 500,000 Rather more than 300,000 were young persons under 16 years of age. He continued —]

FOUNDATIONS OF INDUSTRIAL MEDICINE

The foundations of industrial medicine were laid about a century ago by first and foremost Charles Turner Thackrah and the members of the first Factory Commission. of which Edwin Chadwick was one As a consequence of the Factory Act of 1833 a certificate was required from a surgeon, there being no birth certification and the age of employment having been limited to 9 years of age, stating that each child had been personally examined, and was of the ordinary strength and appearance of a child at that age Thus arose. perhaps the oldest part-time State medical service (and while thoroughly convinced of the impracticability of a whole-time State medical service I am a strong believer in a part-time one) —namely, that of the certifying factory surgeons Unfortunately, in the next important Factory Act of 1844 the certifying surgeon's duties became stereotyped on a too narrow negative basis Whatever the future of the service—and I do not think it is imperilled under the new Factories Bill—the duties are only likely to be made positive, as they should have been from the first, and somewhat extended , it lies with those who are now medical students, to the number of at least 1500 Thackrah s book on " The Effects of the Principal Arts Trades, and Professions on Health "—the result of clinical observations drawn from the West Riding of Yorkshire and Lancashire —was first published in 1831. Its reception was so successful (how different this from the sale of such a book now !) that it went into a second edition the next year The outstanding merit of his book is that it was written by a clinician and the claim that industrial medicine offers the greatest results for preventive medicine on the clinical side is my main theme here It is a job for the general medical practitioner or consultant and not for the medical officer of health

I believe Thackrah's death, at the age of 37, retarded the progress of industrial medicine and surgery for some 70 years until Whitelegge, as Chief Inspector of Factories and Delepine in Manchester, gave fresh impetus to the subject Had he lived his clinical experience would have emphasised the need of medical supervision in the factory and workshop by practitioners having the necessary knowledge of the home conditions of the workers and treating them for the maladies contracted at their work. While he would have welcomed the operation of the National Health Insurance Act, he would not have been content to see the workpeople streaming when ill from the factory to their panel practitioner and not to see even a trickle from the panel into the factory to try to anticipate intelligently, and check illnesses which otherwise must form claims upon the funds

THE MEDICAL CURRICULUM AND INDUSTRY

While the medical student cannot fail to learn a great deal about the maladies and accidents which strike down the workpeople in common with the general population, little or nothing is done in the medical curriculum to link this knowledge up with their causes arising out of the modern factory system I find myself thus in agreement with Sir George Newman when referring to the examination requirements of the Conjoint Board of the Royal Colleges of Physicians and Surgeons on Public Health he says : " There is a significant absence of all reference to some of the most vital elements of personal and public health "[1] In his list of omissions he mentions health insurance. vital statistics, factory hygiene. industrial poisoning and the duties of the medical practitioner in respect of preventive medicine and his relationship to the sanitary administration of the country Who could trace the vast influence of industry on health in this extract from the syllabus of instruction on public health, unchanged for 20 years, in a first-rate medical school : ' Housing effects on health of overcrowding. vitiated air and occupation," and from that on forensic medicine : " Poisons in their medico-legal aspects "[2] And yet there are 24 lectures given in both public health and forensic medicine to the fourth and fifth year students

The syllabuses might be brought more up to date so that the necessity of thinking twice on industry as affecting health might be awakened by someone competent to impart the information

On this subject the attitude of mind towards labour is very important While naturally all medical and surgical treatment is extraordinarily interesting as between doctor and patient, it is an individual and isolated interest, whereas industrial medicine brings in a host of new factors if only the doors of the imagination are not closed to them as the mind has to visualize the nature of the patient s work the materials used, and the way in which they are used

WHAT THE MEDICAL STUDENT SHOULD LEARN

What then should the medical student learn on the subject before embarking on practice ? First he should have a working knowledge of the 11 forms of *industrial disease and poisoning* which statutorily he will have to notify should he come across any, as he certainly will do, in one of his patients They are poisoning by lead, phosphorus arsenic, mercury, aniline, carbon bisulphide chronic benzene poisoning, anthrax. toxic jaundice. epitheliomatous and chrome ulceration He should know broadly the main industries in which cases of illness and poisoning are likely to arise their main symptoms which he will have learnt at any rate in the case of some of them from the lectures on general medicine or forensic medicine how far they are preventable on general principles which can be applied to them on factory premises and the manner in which they have been affected by the control to which they have been subjected since notification was required. Because medicine has had triumphs in this field as in others And the failures would be pointed out also as so much more can be learnt from them than from the successes In some cases the weal or woe of an industry turns, as in the house painting industry, on the conscientious way in which the obligation to notify lead poisoning is carried out If the cases in this industry fail to diminish, prohibition of the use of white lead paint in the internal painting of buildings will have to be enforced The Secretary of State—he himself has said it

In addition to the 13 notifiable diseases and poisoning. over 20 others are scheduled under the Workmen's Compensation Act Indeed, under this Act is included every industrial disease poisoning, and injury (not being in the nature of an accident) which answers to the test: Is it so specific to the employment that causation by the employment can be recognised in individual cases ? The benefits under this, the Cinderella among Acts of Parliament are none too easy for the workman to obtain unless his medical attendant has made it his duty. in the interests of his patient to find out precisely the necessary procedure Hence some knowledge of the

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[1] Some Notes on Medical Education in England p 85

NEW PREPARATIONS

"HYPOLOID" EPHEDRINE HYDROCHLORIDE.—In addition to "Tabloid" Ephedrine Hydrochloride, gr. ½, which has been available for some months, Messrs. Burroughs Wellcome and Co. are supplying "Hypoloid" Ephedrine Hydrochloride, 0.03 g. (gr. ½ approx.), for hypodermic injection. The "Tabloid" and "Hypoloid" products are of uniform composition and therapeutic activity, and they present the true alkaloid, particular care being taken to exclude pseudo-ephedrine. "Hypoloid" Ephedrine Hydrochloride, 0.03 g., is issued in boxes of ten 1 c.cm. phials.

EATAN.—This preparation, which is to be obtained direct from the distributing agent, Mr. Alfred Dehez, Monument Buildings, London, E.C. 3, has been brought to our attention from the University Hospital in Zurich, where satisfactory results have been obtained from its use. Also, under the description of "Hydrolized Albumen," one of the medical officers of the Charité Hospital, Berlin, has given a favourable account of the use of Eatan and similar evidence has been published in the *Deutsche Medizinische Wochenschrift*. The preparation is described as being the result of "total reduction of animal albumin, blood, connective tissues, bones, joints, blood-forming, internal, secretory and other organs," but the method of preparation is not explained nor is the sort of concrete information given which can be checked by analysis. Granted that the preparation is nutritive and restorative, because this view is supported by a good deal of medical testimony, the demands of scientific therapeutics are not met in the literature which is circulated with the preparation. It is supplied in small bottles at the price of 4*s.* net, and on medical advocacy seems worth trial in cases of debility of varied origin.

IODINE

A RECENT publication by Dr. Kenneth Fraser[1] upholds the importance of a sufficiently iodised diet in preventing a number of conditions besides goitre. His interest in the subject was first aroused by the success of iodine in an apparently hopeless case of rheumatism. He then studied the school-children under his care from the point of view of iodine deficiency, and came to the conclusion that lack of this substance played a part in causing such conditions as boils, chronic septic spots, chronic bronchitis, and debility. He and his colleague Dr. A. H. Towers accordingly administered iodine to children who had failed to respond to the usual lines of tonic treatment, and their results impressed them very much. Dr. Fraser states that in practically every case parents and head teachers reported a marked improvement in health and physique, and a gain in weight, energy, and working capacity. Septic spots and boils vanished, chronic rhinitis cleared up, colds and coughs disappeared and did not recur. In several cases persistent enuresis was stopped. Teachers noted that the children were no longer listless and dull at their work, and a number of backward children were able, when taking iodine, to cope with the work of the standard proper to their age. The best method of administration and the optimum dose of iodine were found to vary. Some children did very well on one iodised sweet or chocolate per week—gr. 1/10 to 1/5 of iodine. On the whole, sweets appeared to give the best and quickest results.

Dr. Fraser is an enthusiast, and research workers may look somewhat askance at his "some hundreds of cases" without recorded controls, and at his rather undiscriminating choice of references to the value of iodine in disorders of all kinds. He is convinced, however, that iodine starvation is the unrecognised cause of much unnecessary ill-health and lack of physical and mental tone, and he regards it as deplorable that iodine-therapy should be associated only with the treatment of goitre, which is, he says, "a side issue, but has become a red herring on the trail of the much greater question—the treatment of iodine starvation cases, irrespective of whether they have goitres or not." Some years ago Hertoghe and Levi[2] described the condition of minor thyroid insufficiency as hypothermia, comprising coldness of the hands and feet, general chilliness, liability to muscular and joint pains, associated with loss of hair, poor appetite, fatigue, and liability to headaches. So common is this picture that it is safe to say that but a small percentage of sufferers have iodine prescribed for them. Dr. S. Barwise, late medical officer of health for Derbyshire, estimated that 10 per cent. of the population of his county were suffering from partial iodine starvation. On the other hand, Dr. W. M. Ash's experience in the same county led him to recommend caution in administration of the drug,[3] and there is good reason to deprecate its wholesale recommendation to the public. It may be hoped that the numerous investigations now being carried out in various parts of the world will lead to a clearer view of the truth. In the meantime Dr. Fraser's thesis calls for the Scot's verdict, "Not proven."

HEALTH PROPAGANDA

THE propagandist in public health often finds it difficult to make clear to lay understanding the objects of research, while it is important that interest should be so aroused that the community will be eager to take advantage of the findings of science. The holding of conferences at which experts, medical and lay, can compare experiences before disseminating their conclusions has been advocated in America, and we have received the Quarterly Bulletin (April, 1927) of the New York Health Demonstrations (Milbank Memorial Fund, 49, Wall-street, New York) which describes in brief such a conference. The movement was sponsored by the United States Public Health Service, the New York State Department of Health, the State Medical Society, the State Charities Aid Association, the New York City Department of Health, the New York Tuberculosis and Health Association, and other bodies with cognate aims, and the main theme of the discussions was the prevention of tuberculosis. Dr. Allen K. Krause, Director of the Kenneth Dows Foundation for Tuberculosis Research at the Johns Hopkins University, referring to the work done in the Cattaraugus County, said it had "taught the shut-in dweller in the remote mountain homestead that consumption need not kill while it had converted the County sanatorium from a domicile of despair into a house of hope, and had helped to stimulate and inspire the country doctor and put at his right hand for service the public health nurse." Dr. Krause supported his words with statistics and with notes made from direct observation and was followed by Dr. Lawrason Brown, Medical Director of the Trudeau Sanatorium, who said that "if all boys and girls during the ages from 10 to 20 could be examined annually, including X ray examination, 90 per cent. of the tuberculosis of early adult life could be prevented." Methods for safeguarding the health of mothers and babies and for providing a public health nursing service for rural areas were among the subjects discussed at the conference, while the brief account of the activities of the Cattaraugus County Health Camp in Allegany State Park, N.Y., suggests many possibilities of conserving child life by means of summer camps conducted on approved hygienic lines. This is certainly a wise way of promoting health propaganda.

THE DELFT YEAST WORKS

WE have received from the Nederlandsche Gist- en Spiritusfabriek an illustrated booklet describing in a popular manner the manufacture of baker's yeast as carried out by this well-known firm at Delft, in Holland. The town has a natural right to the industry as it was a citizen of Delft, Antonie van Leeuwenhoek, who first described the properties of the yeast plant. The N.G. and S.F. factory was started in 1869 by Mr. J. C. van Marken, who combined great business ability with high social ideals. The works, which are now on a very large scale, are up to date, well designed, and famed for the excellence of their products, which include rectified and methylated spirits, and ether for narcosis. The methods of distributing such an unstable product as yeast require to be very efficient and an interesting section is devoted to this subject. The section on social welfare describes the housing estate, with its attractive domestic architecture, the theatre, the school, and the playing fields provided for the staff, who are, we are assured, "one huge family—not a company." No pains have been spared to make the booklet attractive.

DIGBY CHICK

To the Editor of THE LANCET.

SIR,—Your report of the House of Commons proceedings on May 4th, reported in THE LANCET of May 14th, and the heading "Herrings treated with Dye," reminds me to ask some reader of THE LANCET who knows to inform me what is a "Digby Chick"? It has the appearance of a dried unopened bloater of a golden yellow colour. Why is it thus called, and who was Digby, and why a Chick? They are sold in London in some high-class fishmongers.

I am, Sir, yours faithfully,
INQUISITIVE.
May 12th, 1927.

X. Y. Z.—The address of the Industrial Health Education Society, to whose activities we have recently devoted some space (THE LANCET, March 5th, p. 501, and 26th, p. 662), is 89, Millbrae-road, Langside, Glasgow; general secretary, Mr. J. Mackenzie.

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[1] Reprinted from the Annual Report of the School Medical Officer for Cumberland, 1925.

[2] Practitioner, February, 1915.

[3] THE LANCET, 1926, ii., 1022.

This Institute would have as an indication of the lines to pursue the experience of similar institutions already at work as for example, the Course on Industrial Hygiene in the School of Public Health of Harvard University The lines on which this advanced teaching at Harvard is based are . (1) applied physiology and applied psychiatry, (2) industrial toxicology, (3) industrial health administration, including welfare, (4) workmen's compensation and the legal aspects of industrial disease, and (5) practical industrial medicine

"ETHER" CONVULSIONS

BY S R WILSON, M B, B S LOND, M SC MANCH
F R C S EDIN,
FIRST ANÆSTHETIST, MANCHESTER ROYAL INFIRMARY, LECTURER IN ANÆSTHETICS, MANCHESTER UNIVERSITY

THREE years ago the medical board of the Manchester Royal Infirmary formed an anæsthetic committee for the observation and improvement of the anæsthetic service of the institution I was asked to serve as anæsthetic adviser on this committee and to review with them all deaths or other unusual occurrences attributable to the action of general anæsthetics During the year 1926 manifestations of an entirely new nature came up for consideration, and in October last I commenced an investigation as to the cause of obscure deaths occurring during ether anæsthesia and characterised by general convulsions Towards the end of November I presented a preliminary report to the committee embodying an explanation of these unusual symptoms and suggesting various preventive measures for their elimination The coöperation of the chemical and physiological departments of the Manchester University was also advocated in order that the accuracy of these views might be independently tested A full account of the work done up to date has been presented to the medical board, and further investigations are still being carried on, but the results arrived at are of such great practical importance to all concerned with general anæsthetics that I decided to publish a preliminary report embodying a description of the manifestations, their causes, and prevention In previous years the annual number of anæsthetic deaths occurring in the institution was usually nine or ten These deaths had been easily explicable, and various precautionary measures had been adopted by the board with a view to their reduction or elimination My report for 1926 revealed so great a departure from that of previous years that one cannot do better than quote the introductory part of it

> "From the point of view of anæsthetic casualties, the year 1926 appeared to be singularly fortunate, for in the first six months only one death occurred The patient was suffering from acute appendicitis and the anæsthetic given was ether It was also noted that the patient exhibited convulsions, and the surgeon present was inclined to attribute the condition to respiratory obstruction From July to October, 1926, three more deaths occurred under ether, and in each case definite reference to convulsions was made. In fact, one can best express the state of affairs in the words of the resident surgical officer (Mr Bryce), who concluded his report on the first case he witnessed—I have never heard any explanation as to why these convulsive attacks should occur, nor was there anything in this particular case, either before or during operation, to explain their occurrence"

The committee were of the opinion that the matter needed further explanation, and deputed me to investigate the circumstances and to submit advice as to future action

Clinical Features

In our own hospital four fatal cases were reported, whilst later several non-fatal cases were recorded In one of the fatal cases a post-mortem examination was obtained The descriptions were extremely similar, though noted by different observers It will suffice to describe in detail the fatal case in which a post-mortem examination was made

CASE 3—The patient was admitted into hospital on Sept 15th, 1926 He was a man of 21 who was suffering from acute appendicitis Temp. 103·2° F. Induction was effected with a little ethyl chloride and ether on an "open ether" mask Anæsthesia proceeded normally until a short time after the operation had begun when the patient became cyanosed, although the air-way was quite free Oxygen was then given and the colour improved, but the eyelids were held open in tonic spasm Although the patient was in a state of ordinary surgical anæsthesia twitchings of the eyelids appeared and spread to the face, arms, and legs until the whole body was in a state of generalised clonic convulsions The movements were very severe help being required to hold the patient on the table The patient was slightly cyanosed and all attempts to improve the colour failed The operation was concluded as quickly as possible, the convulsions continuing though somewhat less severely At the end of the operation the breathing became weaker and finally ceased about 50 minutes from the commencement of the anæsthesia The pulse failed shortly afterwards Artificial respiration and cardiac massage were tried but without success

Post-mortem Report—No gross changes were found in the brain, heart, or blood-vessels The lungs were congested and a small amount of frothy fluid exuded on pressure The thymus was enlarged and the lymphoid tissue of the spleen and small intestine pronounced The liver was very adherent to the diaphragm, and dense adhesions were present round the transverse colon and spleen.

The chief points brought out on analysis of the four fatal cases were —

Age.—All were young subjects, the respective ages being 15, 14, 21, and 18 years

Sex.—Three were males, one a female

Disease—Three were very definite cases of acute appendicitis with pyrexia The other was a case of gas gangrene following a double compound fracture of the leg

Onset—In all cases the induction of anæsthesia appears to have been uneventful. The convulsions appeared after the actual operation had been in progress several minutes

Duration—Death occurred in from 40 to 50 minutes from the commencement of the anæsthetic

Mode of Death—Convulsions, followed by respiratory stoppage with slight cyanosis, later heart failure

Other Remarks—In one instance the administrator resorted to chloroform to check the convulsions This appeared to precipitate a fatal issue The case of compound fracture of the leg followed by gas gangrene is of interest, in that ether was given when the fracture was first set, and nothing unusual was noted throughout the administration Three days later amputation was decided upon owing to the supervention of gas gangrene, ether was again given and this time convulsions and death supervened

Administrators were then requested to report any non-fatal cases showing convulsions, and to preserve the ether used for analysis Five detailed reports were received All were males between 4 and 29 years of age and were suffering from acute appendicitis with abscess, with one exception This latter was a middle-aged man suffering from piles In all these cases the patient was freely ventilated with oxygen directly the convulsions appeared, and the anæsthetic discontinued or a fresh supply of ether used

Discussion.

A detailed analysis of these cases revealed *two* points of the utmost importance

1 These cases did not correspond to any known form of anæsthetic collapse

2 That the position of ether as a practically safe anæsthetic was seriously assailed

The two immediate problems which presented themselves for solution were · (*a*) What was the cause of death? (*b*) What was the explanation of the convulsions

The Cause of Death—Sudden death during anæsthesia can only be due to failure of one or other of the three systems—respiratory, cardiac, and nervous—whose continuous activity is necessary for life All the reports presented agreed that there was no primary failure of respiration or circulation The heart was always the last to give out and the degree of cyanosis was never excessive The mode of death and the early appearance of convulsions point to the nervous system as the one essentially affected working of the Act is a matter of urgency for the newly qualified practitioner. Neither his own certificate nor any certificate under the National Health Insurance Act will help the patient.

Further, the medical man is much more likely to be called on to give *evidence at an inquest* on a case due to the effects of poisonous dust, gases, or fumes than in a murder case, and the nature of the principal ones—carbon monoxide from blast furnaces, power gas and in coal mines, sulphuretted hydrogen gas, nitrous fumes, and the like—should be stressed in the teaching of forensic medicine. The dramatic side of "gassing" cases, and the means of defence against them, as, e.g., in mine rescue work, should not be excluded from the medical curriculum. I would emphasise the extraordinarily human side of the applications of physiology, engineering, and chemistry in the protection of the industrial population. The sheet-anchor, for instance, for the protection of workers against injurious dust, gases, and fumes is locally applied exhaust ventilation as near as possible to their point of origin, and against vitiated air from aggregation of persons general mechanical ventilation by means of extraction fans. The disadvantages of plenum systems of ventilation in this respect, not only for factories but for schools and public buildings, also ought to be insisted on. This system invites the air into a room and then having in its course stirred the dust up leaves it to find its way out as best it can. Extraction fans give the air a directional movement. An immense field of educational work is required to impress on factory employees Hill's dictum that moving air and not the atmosphere of the reptile-house of the Zoological Gardens—his description, not mine—is the proper one for human beings to live in.

How many medical men know that unless the employer has done everything (and everything means a good deal) the workman can do next to nothing to protect himself against the risks of his trade? No dangerous industry can be made safe to-day without bringing to bear upon it an influence or influences external to the workman—that is to say, conditions over which he can exercise no control. Examples of industries, highly dangerous 25 years ago, which have been made either safe or very much safer than they were by such means, are (1) the lucifer match industry by the substitution of sesquisulphide of phosphorus for yellow phosphorus (achieved by the Berne Convention regulations having proved a failure); (2) the manufacture of white lead paint owing to the discovery of the greater affinity of white lead for oil than for water, so that now a suspension of white lead in water is converted into oil paint in automatic closed-in machines without the creation of any dust; (3) the pottery industry through the discovery of the late Sir Edward Thorpe, the Government chemist, that carbonate of lead can be combined with silica, &c., in such proportion as to form a glaze practically insoluble in the human body; (4) disinfection of anthrax-infected wool, as in the Government wool-disinfecting station in Liverpool, and the treatment of anthrax by serum.

Examples of influences dependent on the worker's will to use them and, therefore, useful up to a point—but no remedy—are respirators, gloves, washing accommodation, overalls, and waterproof sandpaper to try to stop the dust in dry rubbing down of painted surfaces.

Lastly, I think the medical student should receive a picture of the *causes underlying so-called industrial unrest*. And this subject can be made very interesting by tracing industry through the industrial revolution down to modern times. In doing this he could be made to realise how this country passed through a dark page in its social history, the memory of which and the fear of a repetition is at the back of the minds of all trade-unionists. This subject at first sight might be thought a little outside my sphere, but the psychology of the worker and of the employer are both very prominent to-day and must remain so for many years to come. This aspect of industrial medicine is the basis of the work of the Institute of Industrial Psychology and of that of the Industrial Fatigue Research Board, a department of the Medical Research Council. The newly qualified practitioner in an industrial area may well have to treat his patient not only for a particular malady, but also for the social and industrial conditions which memory and auto-suggestion have conjured up. And by virtue of the healing art he practises no one can unconsciously influence both employer and employed so well if the right attitude towards labour has been grounded in the medical man during his student days. He stands in a privileged position and his influence is incalculable.

[This subject was illustrated by slides of workshop conditions under the craft guilds during the industrial revolution, and of the best modern construction; also by slides of Constantin Meunier's bronzes of the miner, the glass-blower, the tanner, &c., and a picture of industrial fatigue by Degas.]

THE RÔLE OF THE M.O.H.

Is anything more than I have described necessary in the teaching of industrial hygiene under the new regulations of the General Medical Council for the Diploma of Public Health where, in *Part II.*, it is linked up with maternity and child welfare service, school medical service, venereal disease service, tuberculosis service, and inspection and control of food as essential subjects for instruction? These, except industrial hygiene, are part of the business of the local medical officer of health, and it would almost appear as though the General Medical Council intended that the M.O.H. should become the mandarin to deal with industrial medicine despite the limitations of his office for such a task. His high position as the authority on housing makes it desirable that he should, in addition to the matters I have enumerated, know about factory construction, drainage, sanitation, water-supply, cloakroom accommodation, and be in touch with the welfare department if there is one. But let him keep hands off the clinical side inside the factory. This clinical side in the hands of the general practitioner might well be linked up with the other local public health services, but not be entirely run by the local authority. The medical officer of health has a definite rôle to protect the health of the individuals affected by influences under the control of the local authority. He has no opportunity of studying the effects of industry on living persons nor could it be made to fit in with his other duties, nor can he be expected to be responsible for the health of the population caused by matters outside the control of the local authority. A medical officer of health could not survey usefully the effects of industry from the standpoint only of his particular area. Factory administration would lose its value if handed over to officers responsible to local authorities and not to a central department.

It would never do for the medical officer of health to be called the certifying surgeon (or the "appointed doctor," as the Factories Bill has it) in the same manner as he is now designated the school medical officer. On the whole, therefore, seeing how much more than a knowledge of sanitation should be required of the medical man in the factory, I do not think the training in industrial medicine for the D.P.H. requires to be much in advance of that I should like to see given to the medical student.

A CENTRAL INSTITUTE OF HYGIENE.

There still remains, as suggested in the report of the Post-Graduate Medical Committee, the Central Institute of Hygiene to develop in the future research work and advanced teaching in all branches of preventive medicine, including as one of them industrial medicine and hygiene. Here the "distinctively high proficiency, scientific and practical," which is aimed at by the General Medical Council would be obtained by those who are going to make this their life work—the full-time industrial physicians and surgeons and a few others

3 Acetaldehyde and "peroxide" have been definitely demonstrated to be present and afford adequate explanation of the anomalous symptoms

4 The chemical properties of aldehyde are such as would account for these effects, for it is a powerful reducing agent, and would tend to cell asphyxia, and the subsequent formation of acetic acid would increase the H-ion concentration of the tissue fluids and equally favour convulsions The aldehyde appears to volatilise first and the peroxide seems to favour aldehyde formation

5 The detrimental effects of these impurities are most pronounced in patients already suffering from toxæmias

6 In our experience the impurities were present in the ether on delivery, and were increased in amount by existing methods of ether administration

7 It is possible that in some instances of deaths under ether in cases of acute appendicitis these toxic agents have contributed to a fatal result without the actual occurrence of convulsions Also that post-anæsthetic vomiting is greatly intensified by their presence for, since a pure ether has been in use, there has been a striking reduction in this symptom

8 It is not clear as to why these impurities should apparently have only appeared in toxic amounts since the beginning of 1926 Prof Lapworth suggests there may have been some change in the method of manufacture I am not aware of any such change, and am of the opinion that the change probably lies in the spirit used in manufacture

9 The question of ether purity requires further investigation, and strict standard tests are required for application to all ethers supplied for the purpose of general anæsthesia

In the meantime we have adopted certain precautionary measures (1) Only pure ethers are to be used (2) The ether in use is periodically tested by ourselves (3) Exposure to light and air have been eliminated until actually in use (4) All stale ether from the operating theatres is discarded and sent to the dispensary to be used for other purposes, such as the making of ether soap (5) I have designed a modification of our ether vapour bottles (Shipway), in which amber glass is used to protect the ether from the theatre lights, and the metal tube which projects below the level of the ether is replaced by bone or ivory (6) All cases showing convulsions are to be reported, whether fatal or not, and the ether in use to be preserved for analysis Should convulsions occur the patient should be promptly ventilated with oxygen containing 5 per cent carbon dioxide, and if more anæsthetic is required a fresh batch of ether is to be used

In view of the importance of the condition a circular letter was sent to 24 anæsthetists in London and the provinces Twenty-one replies were received, and I take the opportunity of thanking those who did so Analysis of these letters revealed that five observers had direct knowledge of the manifestations, three observers had heard of them, three observers had noted convulsions in recognised epileptic patients, but all had recovered, and ten observers had no knowledge of the condition Dr Z Mennell attributed the condition to deep etherisation and hyperoxygenation Dr F E Shipway was inclined to suspect the presence of impurities in the ether Dr H G Dodd suggested an association with modern methods of etherisation Dr C Hadfield wrote me very fully on behalf of the Joint Anæsthetics Committee of the Medical Research Council and Royal Society of Medicine They considered the matter one of considerable importance and requiring investigation At the time of writing they possessed no adequate explanation. It will be noticed that our observations more or less harmonise these various views

In conclusion, whilst we await more detailed observations from the scientific side in the public interest, a thorough reinvestigation of the question of ether purity in relation to general anæsthesia is eminently desirable

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CHOLECYSTOGRAPHY.

BY PETER G McEVEDY, M B LOND, F R C S ENG,
HONORARY SURGEON, ANCOATS HOSPITAL, MANCHESTER,
AND
JESSIE E SHERET, M B, B S DURH, D M R & E CAMB,
ASSISTANT RADIOLOGIST TO THE HOSPITAL

THE last few years have witnessed an intensive study of the liver and biliary tract, and probably the most important discovery from the practical point of view has been that of cholecystography Graham and Cole[1] published the first paper on cholecystography in 1924 Since then published results have proved that this is now an essential method in the investigation of the dyspepsias Graham[2] and his associates now obtain a diagnostic accuracy of 97 per cent by the intravenous method

The substance that has been most generally used has been sodium tetraiodophenolphthalein, but Graham now finds that its isomeric compound phenoltetraiodophthalein gives equally good shadows in smaller doses, so that the chance of toxic effects is lessened With the substances in use at present there are still many debatable points There is not general agreement as to the method of administration or as to the value of certain points in the interpretation of the radiograms The dye is administered either intravenously or orally, and Graham, after a large experience, advocates the intravenous method. The advantages of this are that it gives much denser radiograms than the oral method, and that it is more certain in its action A known quantity of dye that is excreted almost exclusively by the liver is introduced into the circulation at a known time.

The disadvantages are · (1) as in all intravenous methods constant care must always be exercised in the preparation of the substance used and in its administration, (2) with the substances at present in use there is a slight danger of thrombophlebitis, (3) severe reactions may occur on rare occasions as evidenced by cases reported where the symptoms have been alarming

The advantages of the oral method are that it can be given with perfect safety, and it is not necessary for the patient to be in hospital The administration is simple, time-saving, and free from accidental dangers The disadvantages are that the amount absorbed from the intestinal tract is not known for certainty, the rate of the absorption is variable, and certain mild toxic symptoms may occur In our series several patients complained of nausea In only two cases did actual vomiting occur, in one of these the capsules were vomited As the radiograms are not as dense as those obtained by the intravenous method, their interpretation is more difficult and the percentage of positive and negative shadows of gall-stones is lower

Graham states that cholecystography is really a means of studying the function of the gall-bladder rather than the exact pathological lesions present, and that the only two known functions of the gall-bladder are the regulation of the pressure within the biliary tract and the concentration of the contained bile Regulation of the pressure is shown by changes in size of the gall-bladder shadow, indicating distensibility and contractility, and the power of concentration is shown by the increasing density of the shadow

We have analysed the results obtained by cholecystography in a hundred consecutive cases controlled by operation Many of the cases were operated upon for disease of organs other than the gall-bladder, but only those cases are included in which the gall-bladder was inspected at the operation

Explanation of the Convulsions—Every single observer gave a clear and definite account of the occurrence of convulsions preceding a fatal issue They started in the eyelids and face and gradually spread all over the body, and were not associated with any respiratory or circulatory embarrassment

The other points brought out on analysis of the reports were · (*a*) all the patients were young subjects, (*b*) all the fatal cases and most of the non-fatal ones were already in a state of toxæmia (acute appendicitis and gas gangrene)

The constancy of the convulsions points to the nervous system as the one primarily concerned in these unusual deaths Convulsions really signify shortage of oxygen or irritation of the nerve-cells of the central nervous system Whilst such oxygen shortage may result from both respiratory and cardiac failure, in the cases in question there was no evidence of inefficiency of these systems Local oxygen shortage might be due to gross cerebral lesions—such as embolism—but against this is the fact that the convulsions were absolutely generalised, and the post-mortem examination made revealed no naked-eye change in the nervous system or elsewhere which could adequately explain the condition

In view of these facts I concluded that death was due to a *poison acting on the central nervous system*, such poison rendering the nerve-cells incapable of utilising oxygen

Impurities in Ether

It was clear that there was a definite relationship between the administration of ether and these effects, and yet pure ether could not be held accountable, having been in general clinical use for a matter of 70 years without any previous mention of such symptoms It appeared probable that the poisonous effects were due to the presence of impurities, and that such impurities had either recently arisen in manufactured ether or were increased in amount by modern methods of administration or both The former supposition was not altogether unlikely, seeing that between 1919 and 1921 various papers appeared in which it was contended that pure ether was not an anæsthetic and a tendency developed to use impure ethers on this account Whilst such a statement was disproved by the fact that ether had been used over 50 years with satisfaction, and also by the scientific work of Dale, King, and von Leeuwen, the impression still persisted amongst practical anæsthetists

The common impurities liable to be present in anæsthetic ethers are acetaldehyde, "peroxide," ethyl sulphide, ketones, and alcohols The first three of these have been shown by Wesley Bourne to be toxic agents if present to the extent of ½ per cent or more The first two would be likely to interfere with cell oxidation, whilst ethyl sulphide causes enteritis The presence of these impurities in anæsthetic ether might be due to (1) imperfect purification of the original ether, (2) gradual development of the impurities with age, (3) exposure of ether to light and air, (4) contact of ether with actinic light and oxygen.

I concluded that the unfavourable symptoms were due to the *presence in the ether of acetaldehyde or peroxide or both*, and that these impurities would be greatly increased in old-standing samples and particularly if the ether were exposed to the actinic rays of an operating theatre lamp and oxygen bubbled through it, as in a Shipway apparatus Whilst a normal person might survive such poisoning, a patient already partially poisoned from acute toxæmia might easily succumb

With the help of Mr Butchers, our senior pharmacist, rough tests were made which appeared to substantiate these views I also tested spectroscopically the glass storage bottles and the glass of the storage cupboards The amber glass bottles were efficient, but the glass of the storage cupboards, though apparently almost black, transmitted the full spectrum, especially the actinic rays It was also realised that a bottle might remain unused for an indefinite period, but this has been rectified by dating each bottle on delivery to the theatre If these deductions were correct confirmation would most probably be obtained from investigation of the contents of the ether in the Shipway apparatus, for (*a*) old ether is usually allowed to remain in them, (*b*) they are constantly under the influence of the actinic lights of the operating theatre, (*c*) oxygen is being continually bubbled through them

All these conditions would favour the development of aldehyde and peroxide I examined the Shipway apparatus in all the theatres, and naked-eye observation revealed marked corrosion and oxidation of the metal tube The contents were taken away for analysis

In order to test the validity of these deductions we decided to submit samples for chemical investigation to the Chemical Department of the Manchester University and the laboratory of British Drug Houses, which was kindly placed at our disposal No information was divulged, but various samples were put up in similar bottles labelled with identification marks known only to myself Reports as to purity were asked for

The first batch for analysis comprised hospital methylated ether from stock (S), hospital methylated ether from theatre (T), contents of Shipway apparatus from one of the theatres (4), a guaranteed pure ether (B D H) taken at random (5), ether from drop bottle in case of convulsions (6)

These were investigated by Prof Lapworth and his assistant, Mr Robinson, in the Chemical Department of the Manchester University A summary of their report follows —

> " Both S and T contain conspicuous amounts of acetaldehyde, and give a definite deposit of the double compound with sodium bisulphite Such appreciable quantities of aldehyde should be barred The samples also give definite tests as regards ' peroxide ' There is very little free alcohol and methyl alcohol present, but we feel the quantities are too small to prove dangerous To summarise your samples we may say No 5 is in a class by itself Traces of impurities are so slight as to be practically indetectable S T 4 and 6 all give positive results as regards acetaldehyde and peroxide and we would place them as follows S T 6 4 Further tests have confirmed these initial observations, and in two cases of convulsions that recovered the ether was loaded with these impurities "

We also took advantage of the offer of British Drug Houses to make use of their laboratory, for they had for some years interested themselves in the question of pure ether and were especially familiar with the " peroxide " test The numbered samples submitted to them comprised specimens of our methylated ether from stock, from theatre stock, from an ordinary Shipway apparatus, and a sample I had personally prepared by bubbling oxygen through ether in a Shipway apparatus whilst exposed to the artificial light of the theatre for two hours They reported that samples from stock and theatre showed 15 times the peroxide which should be present in a more or less pure ether, samples from the Shipway bottle showed 20 times as much, whilst the artificially prepared sample showed 25 times as much The aldehydes were in excess of any commercial ether they had previously examined Dr A D MacDonald and myself have verified that acetaldehyde has a very definite toxic action in animals

The work is still being continued, and it is my hope that there will be further communications from the departments concerned, but the results up to date afford so striking a confirmation of one's initial deductions that, with the full approval of our committee, I decided to bring them to the general notice of the profession and of those interested in ether purity

Conclusions

1 The convulsions referred to represent an entirely new complication of ether anæsthesia

2 The convulsions are toxic in origin and due to the presence of impurities in the ether

examination Sosman, Whittaker, and Adson[5] state that, although olive oil caused emptying of the gall-bladder in dogs in man it had no effect, and that no effect was produced by exercise They showed, experimentally, that an intact sphincter of Oddi is necessary to obtain a normal cholecystogram

Density of the Radiogram

The power of concentration possessed by the gall-bladder is shown by the density of the shadows, the variations in the power of concentrating the dye are difficult to interpret, and the deductions to be drawn must be founded on experience The diagnostic value of this point is still unsettled but as a single fact it is not sufficient to warrant a definite diagnosis Certainly failure to concentrate is of little value in the diagnosis of a pathological gall-bladder when the dye is given orally In the five cases in which the shadows were faint, the gall-bladder was normal in three and pathological in two at operation We now consider poor concentration simply as an indication that the test should be repeated orally or preferably intravenously

The late appearance of a shadow with the oral method is apparently of no diagnostic value In one case the shadow was first seen 15 hours after the dye was given, three hours later normal concentration had taken place, and at operation a normal gall-bladder was found

The Pathological Gall-bladder

The chief difficulty seems to be to decide when a gall-bladder is pathological. The type of bile in the gall-bladder may be of assistance in arriving at a diagnosis, but it is not uncommon to find concentrated bile in a definitely pathological gall-bladder The appearance of the gall-bladder at operation may, on rare occasions, be misleading In one case the gall-bladder looked perfectly normal, but was found to contain a few minute stones and was definitely abnormal on pathological examination. Some gall-bladders appear normal even after removal, but are found to be abnormal on pathological examination How far is the pathologist's report of a diseased gall-bladder to be accepted as a justification for the removal of an apparently innocent-looking gall-bladder? What percentage of normal-looking gall-bladders would be pathological on microscopic examination? These questions will always influence the statistics on diagnosis by cholecystography Certainly the symptoms are no indication as to the stage of the disease In two cases where gall-stones were found at operation no symptoms could be attributed to the diseased gall-bladder.

Conclusions.

1 Cholecystography after the oral administration of sodium tetraiodophenolphthalein gave a correct diagnosis in 92 per cent of cases controlled by operation 2 A faint shadow of the gall-bladder after giving the dye on one occasion does not warrant the diagnosis of a pathological gall-bladder 3 Early cases of cholecystitis may give normal shadows 4 Occasionally a normal gall-bladder may fail to give a shadow 5 In out-patients only the results of those showing a normal shadow or stones are to be accepted The others need further investigation as in-patients

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ACUTE INFECTIVE OSTEOMYELITIS

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ALTHOUGH histologically identical, there are two types of acute osteomyelitis which differ essentially in their origin, clinical course, prognosis, and treatment These may be classified (*a*) osteomyelitis traumatica, (*b*) osteomyelitis symptomatica

(*a*) *Osteomyelitis Traumatica*

This occurs as the result of trauma, the infection reaching the bone from without and the organisms being foreign to the individual It is seen in connexion with street accidents severe crushes, and the like, and it was seen to good advantage during the Great War It was during the war that its pathology became better understood and its present-day treatment founded In connexion with it the following points are important: (1) the extent of damage to the bone and soft parts (2) the extent of hæmorrhage occasioned, (3) the degree of shock, (4) the general condition of the individual at the time of the accident, (5) the virulency of the infection.

Of all the long bones injuries involving the femur are the most serious If the general condition of the individual prior to the accident is poor, and if considerable hæmorrhage and shock have occurred, it is amazing how rapidly a general septicæmia can develop Infection under these conditions is productive of septic infarcts in the lungs spleen and other deep organs and suppurative pericarditis is not an uncommon complication Septic infarction of the skin (fixation abscess) is extremely rare, whereas pyothorax, following upon infarction of the lung, is not uncommon Cultures taken from the pleural exudation have given invariably a luxuriant growth of organisms It may seem strange that organs like the spleen lungs, and kidneys which are so richly supplied with blood, should be singled out for infective infarction but it is understood when we consider that the patient is suddenly infected with foreign organisms against which he possesses no immediate immunity at a time when shock is extreme and when a considerable hæmorrhage has taken place Further, damaged tissues under these conditions allow of rapid bacterial proliferation locally

Treatment is (1) resuscitative, (2) operative Resuscitation must always precede operation for it is useless to operate upon any patient during an interval of shock In every instance in which shock is pronounced and hæmorrhage has occurred direct blood transfusion should be undertaken This must be carried out at the earliest possible moment after the accident It is a useless expedient if left until a virulent septicæmia has established itself. Heat should be applied, subcutaneous saline and stimulants in the form of warm drinks given, and a careful watch maintained for a rising blood pressure and a reactionary hæmorrhage The fractured limb meantime must be immobilised and kept elevated. Operative treatment aims at a complete excision of all bruised and devitalised tissue with removal of the damaged portion of the bone This is carried out preferably under open ether anæsthesia While resecting the damaged bone the periosteum as far as possible must be spared The limb is now replaced on a Thomas splint and a Carrel Dakin dressing applied Provided the wound remains clean, a bone-graft may be inserted to replace the resected portion. The wound need not be absolutely sterile for this undertaking, but it should be free of streptococci and spores, whose absence can be determined by repeated examination of the wound discharges Antitetanic serum should always be given together with polyvalent antistreptococcic serum An autogenous vaccine is often of use, because the patient is without an initial immunity to the infection

Preparation and Technique

Sodium tetraiodophenolphthalein was used in all cases, and the following was the method of administration.

On the day previous to examination the patient was kept on light diet until 9 P.M when a meal, from which proteins were largely omitted, was given, followed by the tetraiodophenolphthalein The amount of the dye given was that recommended by Graham—i e , 0 06 g per kilo of body-weight The patient was radiographed the following day at 9 A M , at 1 P M , and again at 5 P M The capsules used in the examination were those supplied by W Martindale

While in many of our earlier cases undissolved capsules were seen in the colon, they were absent from this series of cases It is probably due to the fact that the coating of the capsules at times failed to dissolve that a large percentage of error in diagnosis occurred during our early cases

There is a small chance of the normal gall-bladder not filling when the dye is given orally This occurred in two of our cases We think that, with the present method of preparing the capsules, this is less likely to occur Still there is no doubt that this failure of the normal gall-bladder to give a shadow in a small percentage of cases is one of the disadvantages of the oral method However, we think that if the gall-bladder fails to fill, and there are no symptoms pointing to gall-bladder disease, then the test should be repeated before a definite diagnosis is made In very fat patients failure to obtain a shadow of the gall-bladder is of little diagnostic value

Interpretation of Radiograms

In the interpretation of the cholecystograms we accepted as normal those in which the gall-bladder cast a dense shadow without shadows of calculi. Cases were diagnosed as pathological in which (1) the gall-bladder did not fill, (2) positive or negative shadows of gall-stones were present, (3) the gall-bladder shadow was faint, and there was no concentration

Analysis of Cases

In this series of 100 cases the X ray diagnosis was correct in 89 per cent of cases that were normal at operation, and in 94 per cent of cases that were pathological at operation

The gall-bladder appeared normal at operation in 47 Of these, 42 were diagnosed as normal and 5 as pathological by cholecystography Of the five that were thought to be pathological, three filled but the shadows remained faint, and in two cases there were no shadows In the two cases in which the gall-bladder failed to fill there was evidently some failure of absorption of the dye In one case the gall-bladder filled normally at a subsequent examination, and in the other the gall-bladder was removed as the symptoms were suggestive of cholecystitis, but it appeared normal on macroscopic examination, contained concentrated bile, and the microscopic evidence of slight cholecystitis did not justify the X ray findings

In 53 cases the gall-bladder was pathological at operation The operative findings were —

Chronic cholecystitis with calculi	48
„ „ without calculi	2
Dilated gall bladder secondary to carcinoma of the pancreas	2
Carcinoma of the gall bladder	1

Of these, 50 cases were diagnosed as pathological and three as normal by cholecystography The X ray findings were as follows —

No shadow of the gall-bladder	42
Faint shadows of the gall bladder	2
Positive shadows of gall stones	3
Negative „ „	2
Diffuse mottling of the gall bladder	1
Normal shadows „ ,	3

In the three cases that were diagnosed as normal the gall-bladder filled, concentrated, and emptied normally At operation the gall-bladder in each case was thin-walled and bluish and contained concentrated bile, but showed a small amount of subperitoneal fat at the fundus in two, and careful palpation revealed a few small calculi The microscopic examination showed definite evidence of chronic inflammation It is very unlikely that the intravenous method would help in the diagnosis of these early cases, but where the stones are larger and the gall-bladder is still functioning normally it is more likely to show the calculi as shadows It is quite evident that the gall-bladder may be functioning normally, as judged by cholecystography, and yet may be definitely pathological

In one case the gall-bladder was faintly outlined before administration of the dye, filled and concentrated well after the dye was given, and at operation appeared to be normal A small percentage of gall-bladders show on the films taken before giving the dye, but the part played by disease in causing a gall-bladder to give a shadow has yet to be settled The amount the fundus of the gall-bladder protrudes beyond the edge of the liver is certainly a factor in deciding these shadows

Wilkie and Illingworth[3] report a case in which the correct diagnosis of a pathological gall-bladder was made from the deformity of the cholecystogram Hurst[4] states that cholecystography is a very useful means of confirming the presence of gall-bladder tenderness, and of deciding if the tenderness is confined to the visualized gall-bladder When the dye is given orally, although the radiograms may show quite dense shadows, we have not found screen examination to be very satisfactory

Cases with Jaundice

Contrary to what has been stated, we have found cholecystography to be of value in cases with jaundice In three cases of catarrhal jaundice, not included in the above series, the gall-bladder filled and concentrated well The diagnosis was confirmed by the subsequent course of these cases Likewise, in a case of biliary cirrhosis with marked jaundice, and in a case with jaundice due to secondary deposits in the liver, the gall-bladder filled normally In cases with obstruction of the common bile-duct the gall-bladder invariably fails to fill with the dye When the obstruction is due to carcinoma of the common bile-duct or of the pancreas, the gall-bladder, although still functioning, is so distended with thick tarry bile that not sufficient dye is carried to the gall-bladder to give a shadow

Emptying of the Gall-bladder

Various substances have been used to cause emptying of the gall-bladder Food of any description will cause the gall-bladder shadow to become less dense Fats act more quickly than proteins or carbohydrates We have tried various substances, and have found olive oil to be very effective, 2 oz of olive oil at times causes a dense shadow to disappear in 30 to 50 minutes If the gall-bladder gives a shadow at the second examination we now give 2 oz of olive oil and make the third examination one hour later However, as with all other substances we have tried, the time taken to cause the shadow to disappear has varied widely in different cases This is particularly marked with pituitary extract From the emptying power of these substances, so far, we have not been able to draw any deductions that are reliable in making a diagnosis Their use in estimating the pathological condition of the gall-bladder has yet to be worked out

We have found that strenuous exercise has, at times, a definite effect in emptying the gall-bladder For this reason we have advised out-patients to take as little exercise as possible between the time of administration of the dye and the completion of the four deaths were associated with infection of this bone, two involving the upper diaphysis and the hip-joint, and two the lower diaphysis, one involving the knee-joint Of the remaining 24 cases, five involved the proximal site of the diaphysis of the tibia, and ten were confined to the distal site Thus 31 out of 40 cases involved the bones of the lower extremity—i e , 75 per cent The remaining nine cases involved the humerus in five, the radius in two, and the ribs in two

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AN ATTEMPT TO ISOLATE *BACTERIUM PNEUMOSINTES* FROM PATIENTS SUFFERING FROM INFLUENZA

BY G S WILSON, M D , M R C P , D P H LOND ,
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Olitsky and Gates[1] and Gates[2] have described the isolation of a minute, anaerobic, Gram-negative cocco-bacillus, capable of passing through a Berkefeld N or V candle, from the nasopharyngeal washings of patients suffering from clinical influenza The nasopharyngeal washings, which as a rule proved virulent only during the first 36 hours of the disease, gave rise on intratracheal injection into rabbits to a syndrome of fever, mononuclear leucopenia, and conjunctivitis , when killed, usually after two days, the animals showed pulmonary lesions consisting of emphysema, œdema, and hæmorrhages The organism was cultivated directly from the filtered nasopharyngeal washings of influenza patients, but more frequently and with greater success from the ground-up lungs of rabbits that had been injected with these washings Primary cultures were obtained in Smith-Noguchi medium, but later the organism was cultivated anaerobically on blood agar plates, in coli-broth, and on certain other media Suitable suspensions of the organism, which they call *Bacterium pneumosintes*, were agglutinated, generally to a titre of 1–10, by the serum of a number of patients that had recovered from influenza from ten days to five months previously The findings of Olitsky and Gates have been partially confirmed by a number of other workers (for references see Gates [2]), but the evidence that this organism is in any way causally connected with the production of influenza in human beings is unsatisfactory

Influenza in Manchester, 1927

During the first quarter of the year there was an outbreak of influenza in this country To illustrate the progress of the disease in Manchester the influenzal deaths and reported cases of influenzal pneumonia are given as follows

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It will be seen that the height of the epidemic was reached during the last fortnight of February and the first fortnight of March The usual symptoms in typical cases of the disease were chilliness, fever, headache, prostration, pain in the back and limbs, suffusion of the conjunctivæ, sore-throat, and later tracheitis After 3 to 14 days or so the attack subsided, leaving the patient weak and listless Numerous abortive cases lasting only 24 or 48 hours occurred

In this laboratory about half of the staff was attacked Most of the cases occurred during the first three weeks of February, so that by the time influenza was rising to its maximum in the city as a whole the laboratory epidemic was practically over

Experimental Work.

During the progress of the epidemic an attempt was made to cultivate *B pneumosintes* from the nasopharynx of influenza patients

The technique adopted was as closely similar as possible to that described by Olitsky and Gates Briefly, it was as follows —

After preliminary cleansing of the mouth, each nostril was washed out with 25 c cm of sterile saline, the fluid being returned through the mouth and collected in a sterile bottle The washings were shaken with glass beads for 20 minutes, and 1 5 to 3 0 c cm were injected intratracheally under ether anæsthesia into young rabbits weighing 1000 to 1500 g After two days the rabbit was killed by one blow on the back of the neck, and under strictly aseptic precautions the lungs were removed to a sterile Petri dish After examination of the macroscopic appearances, one of them was cut into fragments, ground up with sterile sand in a mortar or a Griffith's tube, and suspended in a small quantity of saline , 1 c cm of this suspension was then seeded into one or more tubes of Smith-Noguchi medium, and aerobic cultures were made on to blood-agar and Fildes agar slopes If the lungs appeared at all suspicious, 2 0 to 3 c cm of the suspension were injected intratracheally into a fresh rabbit In addition portions of the lungs were reserved for section, and portions were transferred to 50 per cent glycerol for further study if necessary

The Smith-Noguchi medium was made up with pure untreated ascitic fluid to which 1 per cent of dextrose had been added , a large piece of rabbit's kidney was placed at the bottom of the tube, and the whole was covered with a layer of vaseline 1 c cm deep , the tube was further sealed with a paraffined cork After two or three days in the incubator anaerobic conditions were established, as was shown by the progressive decolorisation from below upwards of methylene-blue added to a control tube In order to obtain a satisfactory degree of anaerobiosis, all tubes, therefore, were incubated for three days before inoculation

The pure ascitic fluid had a reaction of pH 8 2, but that of the finished medium was about pH 7 4—a reaction which, according to Olitsky and Gates,[3] is very favourable for the growth of *B pneumosintes*

Direct cultivation of the nasopharyngeal washings was attempted on only two patients , prior to seeding into Smith-Noguchi medium the washings were filtered either through a Mandler or a Chamberland L 2 candle (Berkefeld N and V candles were unobtainable) , 1 c cm. of the filtrate was used as the inoculum In the animal experiments with one exception, in which an L 2 candle was used, all cultures were made from unfiltered lung suspensions

The Smith-Noguchi tubes were incubated at 37° C for ten days Subcultures were then made into fresh tubes of the same medium, and on to two lots of blood-agar or Fildes agar slopes, one lot of which was incubated aerobically and one lot anaerobically in a modified McIntosh and Fildes jar. Anaerobic subcultures were also put up in coli-broth * This procedure was repeated twice after intervening periods of ten days Altogether, therefore, four Smith-Noguchi tubes were inoculated in series, and subcultures made from each into blood-agar or Fildes agar, and coli-broth

One of Olitsky and Gates's original strains of *B pneumosintes* was kindly sent to us by Dr David Thomson This organism grew very well under anaerobic conditions in Smith-Noguchi medium, on blood-agar, and Fildes agar slopes, and in coli-broth We inoculated it on to every batch of medium prepared, and incubated these cultures along with

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* *Coli* broth was prepared by growing a strain of *B coli* in 1 per cent dextrose broth , as soon as the first sign of turbidity appeared, the flask was removed from the incubator and steamed for half an hour In this medium under anaerobic conditions *B pneumosintes* formed a moderate to dense turbidity in seven days

(b) *Osteomyelitis Symptomatica*

This is most commonly a disease of children and young adults The onset, which is preceded by an interval of malaise and pyrexia, is often associated with a sore-throat or occurs during convalescence from one of the exanthems, notably scarlet fever and measles Speaking from a careful study of over 40 cases in children, both bacteriological and clinical, there is abundant evidence to prove that the disease *is only a symptom of a general septicæmia* The bones most commonly singled out for infection are the femur and tibia, both weight-bearing bones, and so more subject to jars and knocks The distal ends of the diaphyses of these bones are the common sites for the initiation of the infection

Pathologically, the disease consists in an acute infection of both the bone-marrow and the compact bone surrounding it The infection may become localised and thus analogous to an ordinary acute abscess elsewhere, or it may become diffuse and involve the entire medullary cavity, in which case it is an acute cellulitic condition The inflammatory process spreads outwards along the Haversian canals and reaches the periosteum, which strips easily from the bone, but does not readily lose its vitality The extent to which the periosteum so strips is an accurate indication of the involvement of the medulla and compact bone Not only does the periosteum retain its vitality, but the endosteum also, important facts to be borne in mind when considering the subject of treatment Osteomyelitis that has become localised will often settle down without active surgical treatment, indeed the condition often passes unrecognised and is treated as rheumatism In such circumstances a small abscess cavity containing organisms of low virulence remains and becomes surrounded by dense bone (Brodie's abscess) The favourite sites for these abscesses are the distal ends of the femoral and tibial diaphyses In future debilitating illnesses these abscesses are prone to become active and may give rise to a diffuse osteomyelitis, or by bursting into a neighbouring joint they may set up an acute septic arthritis

Pain at the site of infection, usually the knee or ankle, is the early symptom The pain may early leave the neighbourhood of infection and migrate to the region of other joints, which may become hot, red, and tender, hence the condition at first is very apt to be confounded with acute rheumatism Later pus forms, which may find an exit from the bone, and either come to the surface or burrow in between the muscles of the limb Should the complete medullary cavity be involved in a cellulitis, the whole limb is exceedingly painful, and constitutional symptoms are more severe Light percussion over *the bone involved causes intense agony to the patient.* From the very beginning symptoms of septicæmia are present The temperature is high and remittent, rigors occur, and the patient is often delirious Common accompaniments are a coarse tremor and picking the nose and face until they are raw Sordes may be present on the lips and teeth, but the tongue is usually clean and the patient takes liquid nourishment well •

Subcutaneous pressure abscesses (fixation abscesses) are common and a bacteriological investigation of their contents gives a clue to the prognosis Thus (1) sterility of the abscess with well-staining leucocytes *is* of good prognosis, (2) *mild infection* calls for a guarded prognosis, (3) virile infection with degenerate leucocytes is of bad prognosis Remarkable, and in strong contrast with the traumatic type, is the absence of deep infarction It occurred in one of my cases only (the spleen), and this case is of such interest in showing the difficulty of early diagnosis that I will relate it briefly

R P, male, aged 10 years, after a period of malaise was seized with pain in his left knee which became swollen and tender The pain left the knee and affected several other joints in turn The temperature was high and the condition was treated as acute rheumatism, which it closely mimicked On the fourth day the patient complained of acute pain in the abdomen, the tenderness limiting itself to the lower right abdominal quadrant At this stage I saw the patient with Dr Frank Anderson, of Stanningley We diagnosed acute appendicitis, and although there was some swelling just above the left knee joint a laparotomy was undertaken There was a considerable quantity of turbid flakey fluid free in the peritoneal cavity but the appendix was not at fault The spleen, however, was enlarged A septic splenic infarct accounted for the abdominal condition. An exploring needle revealed pus just above the knee-joint and an incision proved the condition to be osteomyelitis starting in the lower end of the diaphysis Despite every care the knee-joint became infected The patient, owing to the pain and his general infection, started to go down hill Amputation through the middle third of the thigh was undertaken, and pus was observed to come from the bone-stump After a protracted convalescence the patient recovered and is alive and well to-day The temperature settled only some weeks after amputation, and numerous skin abscesses appeared showing bacteriologically scanty growth on agar *The last skin abscess to appear was sterile* The infection was streptococcal

The natural tendency of symptomatic osteomyelitis is towards recovery Pyrexia may continue for weeks or months, and the patient may become reduced to skin and bone, still the tendency is towards recovery It has often amazed me how a child can stand up to and fight a septicæmia of this kind, and it is a condition therefore in which hope should never be lost

In this series of cases the following were of good omen (1) ability to take nourishment and digest it, (2) sterility of fixation abscesses, (3) the ready healing of fixation abscesses after bursting, (4) a clear mentality and ability to sleep peacefully, (5) absence of albumin in the urine

Of bad omen are (1) hæmorrhage from the vessels around the neighbouring joint, (2) virile infection of fixation abscesses, (3) sluggish indolent appearance of the tissues after the abscess has burst, (4) delirium, anorexia, and inability to sleep, (5) presence of albumin in the urine

Treatment is that of *septicæmia* The less that is done surgically the better If pus has found an exit from the bone, I have been content to make an incision for its evacuation and have gone no farther If the inflammation is confined within the medullary cavity and there is no exit (diffuse osteomyelitis), an incision down to the bone with removal of a limited portion of its compact layer is all that is necessary Under no consideration should the medullary cavity be curetted, because valuable and necessary tissue is removed and the endosteum is destroyed Curetting is analogous to removing the subcutaneous tissue in an acute cellulitic condition of the soft parts

Amputation is called for (1) when uncontrollable hæmorrhage occurs in the region of a joint; (2) when a large joint, specially the knee, becomes infected and *pain is militating against the patient's* chances of recovery I performed amputation in only two of my cases for the above-mentioned reasons The result was an immediate improvement I do not think, however, that the improvement came about as a result of removing infected tissues It was rather the result of removal of the pain of an infected knee-joint in one case and the arrest of hæmorrhage in the other Further, the removal of a limb under these conditions means a saving of energy to the defensive mechanism of the body generally In view of our knowledge of the pathology, resection of the infected bone for symptomatic osteomyelitis is unsound *treatment* This is one of the main points of difference between the *symptomatic* and the traumatic type Good food of a nourishing type, and patients can take and digest it, plenty of fluids, and occasional small doses of calomel are the main essentials

Summary

Of 40 cases of the symptomatic type on which this article is based, there have been four deaths—that is, a mortality of 10 per cent Twenty-five cases occurred in males and 15 in females, or the disease in this series is nearly twice as common in the male sex. Of the bones infected, the femur was involved in 16, and all four deaths were associated with infection of this bone, two involving the upper diaphysis and the hip-joint, and two the lower diaphysis, one involving the knee-joint Of the remaining 24 cases, five involved the proximal site of the diaphysis of the tibia, and ten were confined to the distal site Thus 31 out of 40 cases involved the bones of the lower extremity—i e , 75 per cent The remaining nine cases involved the humerus in five, the radius in two, and the ribs in two

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The technique adopted was as closely similar as possible to that described by Olitsky and Gates. Briefly, it was as follows .—

After preliminary cleansing of the mouth, each nostril was washed out with 25 c cm of sterile saline, the fluid being returned through the mouth and collected in a sterile bottle The washings were shaken with glass beads for 20 minutes, and 1 5 to 3 0 c cm were injected intratracheally under ether anæsthesia into young rabbits weighing 1000 to 1500 g After two days the rabbit was killed by one blow on the back of the neck, and under strictly aseptic precautions the lungs were removed to a sterile Petri dish After examination of the macroscopic appearances, one of them was cut into fragments, ground up with sterile sand in a mortar or a Griffith's tube, and suspended in a small quantity of saline , 1 c cm of this suspension was then seeded into one or more tubes of Smith-Noguchi medium, and aerobic cultures were made on to blood-agar and Fildes agar slopes If the lungs appeared at all suspicious, 2 0 to 3 c cm of the suspension were injected intratracheally into a fresh rabbit In addition portions of the lungs were reserved for section, and portions were transferred to 50 per cent glycerol for further study if necessary

The Smith-Noguchi medium was made up with pure untreated ascitic fluid to which 1 per cent of dextrose had been added , a large piece of rabbit's kidney was placed at the bottom of the tube, and the whole was covered with a layer of vaseline 1 c cm deep , the tube was further sealed with a paraffined cork After two or three days in the incubator anaerobic conditions were established, as was shown by the progressive decolorisation from below upwards of methylene-blue added to a control tube In order to obtain a satisfactory degree of anaerobiosis, all tubes, therefore, were incubated for three days before inoculation

The pure ascitic fluid had a reaction of pH 8 2, but that of the finished medium was about pH 7 4—a reaction which, according to Olitsky and Gates,[3] is very favourable for the growth of *B pneumosintes*

Direct cultivation of the nasopharyngeal washings was attempted on only two patients , prior to seeding into Smith-Noguchi medium the washings were filtered either through a Mandler or a Chamberland L 2 candle (Berkefeld N and V candles were unobtainable) , 1 c cm of the filtrate was used as the inoculum In the animal experiments with one exception, in which an L 2 candle was used, all cultures were made from unfiltered lung suspensions

The Smith-Noguchi tubes were incubated at 37° C for ten days Subcultures were then made into fresh tubes of the same medium, and on to two lots of blood-agar or Fildes agar slopes, one lot of which was incubated aerobically and one lot anaerobically in a modified McIntosh and Fildes jar Anaerobic subcultures were also put up in coli-broth * This procedure was repeated twice after intervening periods of ten days Altogether, therefore, four Smith-Noguchi tubes were inoculated in series, and subcultures made from each into blood-agar or Fildes agar, and coli-broth

One of Olitsky and Gates's original strains of *B pneumosintes* was kindly sent to us by Dr David Thomson This organism grew very well under anaerobic conditions in Smith-Noguchi medium, on blood-agar, and Fildes agar slopes, and in coli-broth We inoculated it on to every batch of medium prepared, and incubated these cultures along with those from our experimental material to make sure that the conditions for growth were satisfactory Every one of these control cultures grew excellently

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* Coli broth was prepared by growing a strain of *B coli* in 1 per cent dextrose broth , as soon as the first sign of turbidity appeared the flask was removed from the incubator and steamed for half an hour In this medium under anaerobic conditions *B pneumosintes* formed a moderate to dense turbidity in seven days

Seven patients were examined, all in the first 24 hours of the disease On four occasions the injections were made into rabbits within an hour of washing out the nasopharynx, on two occasions (patients 5 and 7) between four and seven hours, and on one occasion (patient 3) not till the washings had stood in the ice-chest overnight

Results

Before giving in detail the bacteriological examination of each patient, a few general remarks are necessary First of all we have paid very little attention to changes occurring in the Smith-Noguchi cultures Every one of these tubes—even uninoculated control tubes—showed a varying degree of turbidity on incubation We were unable to convince ourselves that this was in any way dependent on the multiplication of a living micro-organism This seems to have been the experience of other workers [4] Secondly, after examining these tubes microscopically, we came to the conclusion that staining methods were unreliable for demonstrating organisms as small as *B pneumosintes* It was not possible with certainty to distinguish between uninoculated control tubes and tubes in which a known strain of this organism was growing Unless actual colonies can be obtained on a solid medium, or a marked turbidity in a clear fluid medium such as coli-broth, we consider that the demonstration of this organism has not been satisfactorily accomplished

Olitsky and Gates laid stress on the development of conjunctivitis, a rise of temperature, and a mononuclear leucopenia in inoculated rabbits, and on the changes in the lungs at post-mortem examination None of our rabbits showed conjunctivitis Leucocyte counts were made only on the first two rabbits, both of these showed a well-marked mononuclear leucopenia. Counts on the other animals were rendered impossible owing to the pressure of routine work Temperature charts were kept for some of the animals, but in view of Purdy's work [5] it did not appear that any but marked variations could be regarded as significant It may be pointed out that in the protocols given by Olitsky and Gates the rise of temperature was rarely more than 1° C The lung lesions described by Olitsky and Gates were never observed Most of the rabbits showed marked congestion of the trachea, and a few scattered hæmorrhages beneath the pleura But these did not appear different from those observed in normal rabbits killed by a blow on the back of the neck [6] In two or three rabbits a localised fullness of the lung was noticed macroscopically, and in these a second rabbit passage was performed—always without result

Though realising the importance of studying the reaction of the rabbits to injection, we felt it still more important to concentrate our efforts on the actual cultivation of *B pneumosintes* In these efforts we failed completely, from not a single patient did we succeed in isolating this organism

CASE 1—Feb 1st Laboratory attendant Typical attack lasting four days Pneumococcus and Pfeiffer bacillus recovered on direct culture from N P (nasopharyngeal) washings Two rabbits inoculated in series from N P washings All cultures, aerobic and anaerobic, sterile

CASE 2—Feb 18th Clerk Typical attack lasting 14 days, similar to that in 1918 *β*-hæmolytic streptococcus, pneumococcus, and Pfeiffer's bacillus recovered on direct culture from mouth washings N P washings filtered through L 2 candle and seeded into S N (Smith-Noguchi) medium All cultures sterile N P washings injected into a rabbit. Lung suspension filtered through L 2 candle, all cultures sterile Second rabbit inoculated in series Lung suspension not filtered All cultures sterile

CASE 3—Feb 22nd Student at laboratory Typical attack lasting four days One rabbit inoculated Aerobic cultures sterile Staphylococcus grown from third subculture in S N medium Cultures discarded

CASE 4—Feb 22nd Laboratory staff. Typical attack, lasting a week Pneumococcus and Pfeiffer's bacillus recovered on direct culture from N P washings Two rabbits inoculated in series From S N cultures of first rabbit a pneumococcus was isolated All cultures from second rabbit proved sterile

CASE 5—Feb 23rd Housewife Typical attack lasting five days One rabbit inoculated All cultures sterile

CASE 6—Feb 25th Laboratory staff Typical attack lasting nine days One rabbit inoculated All cultures sterile

CASE 7—March 2nd Nurse Typical attack lasting five days N P washings filtered, and seeded into S N medium All cultures sterile Unfiltered N P washings injected into one rabbit Diplo-streptococci isolated from first S N tube Cultures discarded.

Agglutination Experiments

Olitsky and Gates demonstrated the presence of agglutinins—generally at a titre of 1/10—in the serum of 17 out of 19 persons who had recovered from clinical influenza ten days to five months previously

We prepared a serum against a known strain of *B pneumosintes* by repeated injections of a rabbit with washed, killed organisms from a culture in coli-broth The agglutinating antigen was made up in the way described by Olitsky and Gates,[7] using Northrop and de Kruif's buffer solution at pH 6 3 Experiment showed, however, that a more agglutinable antigen could be obtained by adding 0 25 per cent formolised saline to coli-broth cultures and heating to 60° C for half an hour, or by suspending the centrifuged and washed bacilli in 0 5 per cent phenolised saline

We tested the serum of 35 persons in the laboratory against a formolised broth culture of *B pneumosintes* Of these 16 had suffered from clinical influenza 4 to 11 weeks previously, the remaining 19 had not had influenza for at least one year The tests were read after 18 hours' incubation at 55° C None of the sera agglutinated in dilutions from 1/2 to 1/64 The control rabbit serum agglutinated at 1/128 It must be remembered that only one strain of *B pneumosintes* was used Since we do not know whether all strains of this organism are antigenically homogeneous, it is impossible as the result of these experiments to assert more than that antibodies were absent from the patients' sera to this particular strain

Summary

(1) The nasopharyngeal washings of seven patients within the first 24 hours of a typical attack of influenza have been examined by the method of Olitsky and Gates From not a single patient did we succeed in isolating *B pneumosintes*

(2) The serum of 16 persons who had recently suffered from influenza was tested against a *B pneumosintes* antigen, along with the serum of 19 control persons No agglutination was observed —even in a dilution of 1/2

(3) Though we have carefully followed the technique of Olitsky and Gates we have completely failed to confirm their observations on the presence of *B pneumosintes* in the nasopharynx of patients in the early stages of influenza

In conclusion we would express our thanks to Drs G D Dawson, F R Ferguson, and Dr H Harrison for assisting us in the collection of material, to Dr P P Laidlaw for the loan of suitable filter candles; and to Prof W W C Topley for his help with some of the animal experiments

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INVESTIGATIONS ON THE ÆTIOLOGY OF INFLUENZA.

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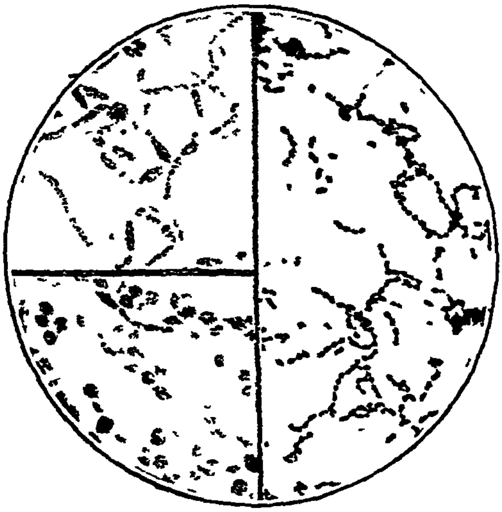
IN a letter to THE LANCET of Jan 29th 1927, the authors pointed out that the true cause of influenza was not yet definitely settled At first it was believed to be due to the so-called influenza bacillus discovered by Pfeiffer (1892) During the great Pan-epidemic of 1918 however this belief began to be doubted for although Pfeiffer's bacillus was found in a fairly high percentage of cases of influenza investigations showed that it was often present also in a high percentage of normal persons even during periods when the disease was not prevalent Several observers obtained Pfeiffer's bacillus in from 50 to 85 per cent of normal individuals It was also pointed out that in diseases like measles and scarlet fever, the percentage of findings of Pfeiffer's bacillus became greatly increased The belief therefore began to grow that this organism was more a secondary invader than the true cause of the malady Failures in attempts to produce influenza in human volunteers by injecting pure recently isolated cultures of Pfeiffer's bacillus into the nose and throat further tended to confirm this belief

FIG 1

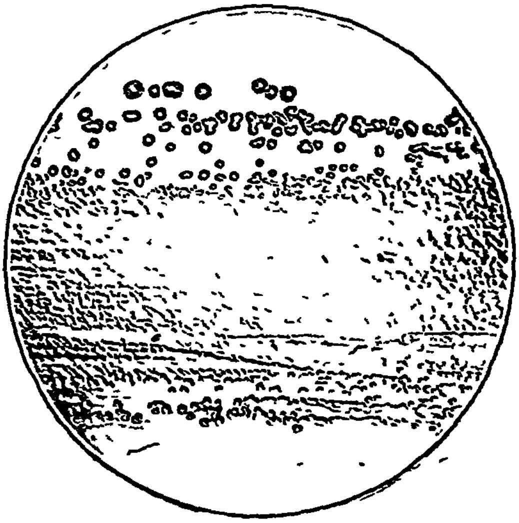


Pleomorphic streptococcus isolated from the blood of one of the authors during an attack of influenza On left 24 hours' test, agar, aerobic, × 1700 On right Broth culture, × 1700

The research worker therefore began to seek for some other cause It has always been agreed that streptococci play an important part in the disease as secondary invaders but several workers now began to suspect that a certain streptoccocus might be the primary cause Others sought for filter-passing organisms, and finally Olitsky and Gates, at the Rockefeller Institute, attempted to prove that *Bacterium pneumosintes* was the true causal organism

The writers have done a certain amount of work on *B pneumosintes*, and after finding a satisfactory medium succeeded in isolating this organism after great difficulty from about three cases of influenza during the year 1925 Somewhat similar bacteria appeared, however, to be present at times in non-influenza cases In December, 1926, as already mentioned in THE LANCET, Jan 29th, 1927, one of us contracted suddenly rather a severe attack of influenza and blood was drawn off from a vein within eight hours of the commencement of the attack and inoculated into culture tubes suitable for the growth of *B pneumosintes*, a streptococcus, however, appeared instead This streptococcus was simultaneously isolated from the interior of the nose

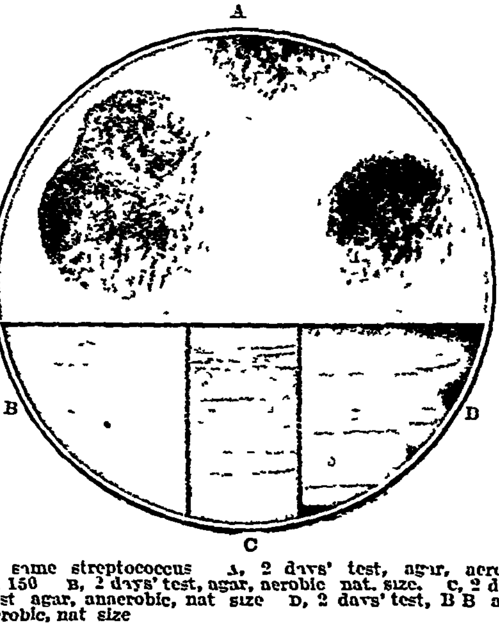
FIG 2.



The same streptococcus Two days' test, agar, aerobic, × 20

The evidence appeared therefore to point to this streptococcus as the primary cause of this apparently true influenzal attack, and it seemed hardly likely that it could already be a secondary invader, as the attack had only commenced eight hours previously

FIG. 3



The same streptococcus A, 2 days' test, agar, aerobic × 150 B, 2 days' test, agar, aerobic nat. size. C, 2 days' test agar, anaerobic, nat size D, 2 days' test, B B agar, aerobic, nat size

After the appearance of our letter in THE LANCET we received a letter from Dr Crookshank, pointing out that a pleomorphic organism had been found in influenza cases by Dr Donaldson himself and several other workers Later, two letters appeared in THE LANCET of February, 1927, one by Dr Donaldson and the other by Dr Fearis, both drawing attention to further references on this subject

During the past two years the authors have been making a special study of the streptococcus group by keeping a careful microphotographic record of all species isolated During this time about 100 varieties have been carefully studied and recorded photographically

Seven photographs of each variety have been taken, amounting in all to a total of about 700 photographs We have worked on this matter in conjunction with Dr Warren Crowe, who simultaneously studied a large number of the varieties on his specialised chocolate blood medium, recording the appearance of the colonies thereon by reflected light After many years of research by his special methods, Warren Crowe is also satisfied that there are well over 100 varieties of streptococci existing on the mucous surface of the body, and that as many as ten or more varieties may be found in one individual Neither Warren Crowe nor ourselves had previously investigated the streptococcal flora of the respiratory tract in influenza, so that none of the 100 varieties recorded by us had come from influenza cases

Now the interesting fact is, that this pleomorphic *streptococcus which we had isolated from the blood* and nose of the case of influenza did not coincide with any of the 100 varieties of streptococci already mentioned in our collection This fact made us still the more suspicious that this new streptococcus might be the possible cause of the disease We sent a culture of this organism to Warren Crowe for his opinion, and after investigation he gave the following statement "Your blood streptococcus is undoubtedly different from any in my catalogue" Since his catalogue comprises over 100 varieties which did not come from influenza cases, this is further reason for our suspicion These indeed were the facts which led us to write our letter to The Lancet of Jan 29th Since that date we have made a thorough photographic record of this pleomorphic streptococcus found simultaneously in the blood and in the nose in the earliest stage of influenza (See Plate I, Figs 1–3) It will be noted that this streptococcus is pleomorphic only when grown aerobically on solid media In broth culture it is a small streptococcus occurring in moderately long chains and without any suggestion of pleomorphic forms It grows rather better anaerobically than aerobically On boiled blood agar, aerobically, it bleaches the medium for some distance around to a definite yellow colour When first isolated in broth media it grew rather feebly, later it grew profusely, leaving a fairly copious white deposit with a moderately clear supernatant fluid It shakes up into an emulsion which contains granular flakes When grown in Hiss's serum water, containing various sugars, it produces after 3 to 11 days acid and clot in glucose, maltose, galactose, saccharose, lactose, dextrin, inulin, salicin, and raffinose It dose not ferment mannite It produces slight acidity but no clot in litmus milk It does not liquefy gelatin It is insoluble in bile After it had been subcultured for two months, half a cubic centimetre of a strong emulsion of the live germ injected intravenously into rabbits produced no harm The pleomorphic streptococcus from the blood and from the nose were found to be identical in every respect *It shows no evidence of being definitely hæmolytic*

Further cases of influenza were now investigated Boiled blood-agar plates were inoculated from the sputum and from throat swabs Colonies of streptococci which bleached the blood were picked off and investigated As many as three varieties of bleaching streptococci were found as a rule in each case In each of four cases of influenza thus examined a pleomorphic streptococcus corresponding exactly to the above description was found In addition, some five further varieties of bleaching streptococci were found which were not pleomorphic, and which gave different sugar reactions We failed to find this pleomorphic streptococcus in two normal individuals who had not had influenza for a year or more Perhaps *the most interesting fact in this investigation* is that the patient (one of ourselves), from whose blood and nose the pleomorphic streptococcus had been isolated in December, had *another mild attack* of influenza two months later, and the same pleomorphic streptococcus was found to be abundantly present in the sputum It is just possible, therefore, that this organism had been present in the respiratory tract for the two months following the first attack

Some months hence a further investigation will be made again to ascertain if this organism is still present We have written this paper, not with any claim that we have discovered the causal organism of influenza, but simply to encourage further researches along these lines

A NOTE ON THE
PREPARATION AND PROPERTIES OF A
FEMALE SEXUAL HORMONE
(MENFORMON) IN WATER SOLUBLE FORM

By Prof ERNST LAQUEUR,
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In The Lancet of May 14th, 1927, Dr E. Dickens, Prof E C Dodds. and Mr D J T Brinkworth describe a process for the manufacture of a water-soluble preparation of the ovarian hormone It may be of interest therefore to summarise here some of our own recent investigations in this field, which have obviously remained more or less unknown in England

Messrs Dickens, Dodds, and Brinkworth state that they have been unable to obtain the hormone in a water-soluble form by means of our so-called water procedure We do not know why they failed,[1] but we draw attention to the fact that during last year *many thousands of units have been prepared* by means of this technique at the Organon Works (Oss, Holland) and the Degewop Works (Berlin) among other places These have been standardised and their strength has been controlled by us We also sent such watery preparations amongst others to Dr E Allen and Dr E A Doisy to compare our standardisations, both investigators found even a slightly higher content of units than we did We take this opportunity of pointing out that the greatest advance in this field is due to American investigators, first and foremost to Drs Allen, Doisy, and J O Ralls, on whose experiments and methods of standardisation our work has been based

At first follicular fluid was used in manufacture, for while at that time we succeeded often enough in preparing the hormone from placenta in water-soluble form, this was by no means regularly the case The explanation lies in the fact that the hormone forms a true, non-colloidal solution (as we proved by its power to pass a dialyzing membrane), but at the same time is soluble in fats and volatile fat-solvents[2] The latter when dissolving fats take up the hormone too, and the larger the amount of fatty impurities present, the more difficult it proves to force the hormone to pass into the water For this reason it is best from the outset to extract the hormone with the least possible amount of accompanying fat This is the reason why we do not use alcohol for the extraction of the crude material, as the American investigators did, it dissolves too large an amount of impurities, and we discarded it at an early stage

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[1] The authors cite only our German publications and these incompletely, but our method of preparation was published in English in the Proceedings of the Royal Academy of Sciences, Amsterdam, 1925, xxviii, No 10

[2] This probably is not true for the *pure* hormone its solubility in fat solvents is not a real one, but is simulated by the fatty impurities that always accompany it It may be mentioned here that B Zondek was the first who suggested the possibility of freeing the hormone from lipoids, and made experiments in this direction

Method of Placental Extraction.

From an experience of hundreds of experiments during the last two years we have found the best procedure to be briefly as follows:—

1 The placenta is used as fresh as possible

2 It is finely minced

3 It is boiled with one and a half times its volume of benzene for at most one hour

4. The benzene is filtered off as quickly as possible and on evaporating the fluid a yellow residue remains, weighing between 200 and 300 mg per kg placenta. It contains about 1000 mouse units (M U) This is only about one-third of the total amount present in human placenta[3] On treating it with water, sometimes part of the hormone dissolves to a clear solution but this is by no means regularly the case and often the fluid is turbid. It is therefore better to proceed as follows:—

5 The residue is repeatedly triturated with small amounts of 80 per cent. alcohol (usually altogether about 50 c.cm.) until the alcoholic layer after centrifugalising is quite colourless Thus a large part of the impurities are left behind

6 The alcohol is evaporated, the weight of the remaining residue is about half that of the first crude product.

7. The residue is shaken with 500 c cm of water and 1 5 to 2 c cm. of 25 per cent HCl for about half an hour

8 It is then left at a temperature of −2° C for about 12 hours

9 Then it is centrifugalised or filtered through glass wool.

10 Finally if the fluid is not yet quite clear it is filtered through asbestos (long fibres, treated with decinormal HCl and washed with water) Common filter paper should be avoided because it adsorbs[4] large quantities of active material

The solution thus prepared contains as a rule about 300–400 M U. The output may be increased to about 600 M U by extracting glass wool and asbestos with benzene evaporating the solvent and dissolving the residue in water in the manner just described.

Technical Modifications

This is not the place to discuss in detail all the modifications of technique or to explain why these were chosen Mention should however, be made of the fact that it is also possible to dissolve at least part of the residue from the benzene into water by simply conducting a current of gas (nitrogen, hydrogen carbon dioxide or steam) into it Air or oxygen should be avoided as the hormone is spoilt by oxidation All other additions, except HCl in the amount given proved unfavourable: organic acids—e g, acetic—are unsuited, as they often cause formation of emulsions that are very difficult or even impossible to break

Instead of using 80 per cent. alcohol to reduce the amount of solids of the first residue, in many cases use may be made of acetone We further tried several saponification methods, following the example of Allen, Doisy, and others A 2 per cent solution of Na_2CO_3 in water proved most useful, though we were able to show that the hormone can stand boiling with strong alkalies and acids even under high pressures and temperatures of 170° C, with water at 240°, in oil at 340°[5] We made use of this property to stand high pressures and temperatures without damage, to mince the placenta in an ideal manner, when heated with water in an autoclave it dissolves completely, after which the fluid may be treated in the usual way

Another method of reducing the dry residue is by making use of adsorption, which may, as has been said, cause so much trouble The solution of the hormone in 80 per cent alcohol is shaken with a special quality of activated charcoal, the hormone, together with a good deal of impurities, attaches itself to the charcoal and from this adsorption the hormone alone is freed by addition of phenol. On distilling off the phenol with the aid of steam a watery solution of the hormone is obtained[6]

The crude product prepared from placenta in the manner described weighs 0 1 to 0 2 mg. per M U. Many thousands of units have already been manufactured in this way in watery solution. Yet we are convinced that the output which at present only represents a fraction of the total amount present in placenta, may be considerably increased; and this may be accomplished by reduction of the dry residue of the first extract, which contains large amounts of impurities

In our first communication we showed that the dry residue per M U may be less than 0 1 to 0 2 mg, and we proposed the name Menformon for that water-soluble hormone which in at most 0 1 mg contains one mouse unit The water solution of hormone from placenta always easily reached this standard and even far surpassed it, so that we could reach a limit of 0 0008 mg per mouse unit—i e, about 0 003 mg per rat unit This was accomplished for instance by again shaking out the watery solutions with benzene; on evaporating the benzene the residue is immediately dissolved in water, or one of the described processes of purification is applied once more. Dialysis may also be made use of if a certain degree of purity has already been reached· then only a small fraction of the hormone is adsorbed by the membrane[7]: with more impure solutions the losses are too big in dialysing

We found that at last the hormone, purified as far as possible with our present methods is no more soluble in the common volatile fat-solvents but only in water (see above) so that its lipoid nature becomes very doubtful

Properties of the Hormone.

So far we have refrained from saying anything about the physical or chemical properties of Menformon We must express some doubt about the value of certain statements in the literature—e g, that the hormone should contain a considerable amount of sulphur (Dickens), or shows a positive histidine test (Dickens, Zondek)—about the accurate chemical analysis by Hartmann[8] from the Ciba Laboratories and even the descriptions of Ralls, Jordan, and Doisy[9]) All these authors worked with materials which consisted only to a very small part of the real hormone The recent investigations of Dickens, Dodds, and Brinkworth, for instance, were carried out upon a material of which 0 5 mg represented 1 rat unit, considering the degree of purity reached by us less than 0 005 of their material must have been the real hormone Our own preparations, some of them not fully purified did not show any certain sulphur content and did not give a histidine test

With regard to the biological properties of Menformon it is possible to say more Apart from its power of causing typical œstral changes in castrated rodents, and even of keeping the animals for six weeks in this state continually by daily injections, we can mention the following facts Menformon is able to induce œstral changes in juvenile and in senile animals[10] It promotes growth of the female genitalia (uterus and vagina) Recent experiments have shown[11] that the lowest limit for obtaining with certainty acceleration of growth of these organs in young rats is 0 00004 mg of Menformon pro die (injected on five successive days) in rabbits we obtained certain growth with 0·0008 mg (also on five successive days)

Further, Menformon shows a typical antimasculine effect, it inhibits the growth of testicles, penis &c, of young males Moreover, it has a specific action upon the secretory parts of the mamma[12] in female as well] as in male individuals, but seems to have no influence upon the nipple or mammary fat Finally it acts specially upon metabolism, but only in *castrated females, not in castrated males* [10]

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[3] Provisional standardisations are carried out with several dilutions of the same batch each dilution being injected into at least three castrated female mice For the definitive standardisation we always use 12 mice

[4] Deutsche med Wochenschr 1926 No 32

[5] Ibid

[6] Ned. Tijdschr v Geneesk 1927, No 17 Klin Wochenschr, No 9

[7] Deutsche Med Wochenschr, 1926, No 32, Klin Wochenschr, 1927 No 9

[8] Biochem Ztschr, 1926

[9] Jour of Biolog Chem lxix No 2

[10] Proceedings of the Royal Academy Amsterdam 1926, xxix No 4 Deutsche med Wochenschr 1926 No 3[illegible]

[11] To appear in Archiv fur Entwicklungsmech

[12] Communication to the Naturforscher Kongress 1926, and Deutsche med. Wochenschr 1927 No 24 (in the press

Extracts prepared in quite similar manner from liver and other organs did not show any sign, or at most faint traces, of the various actions of Menformon mentioned above, even if the dose was increased a hundredfold Thus we think we are justified in regarding these results as typical for this female sexual hormone Mention may be made of the fact that we have been able to prepare from testes substances, also soluble in water, that are capable of inducing œstral changes The output was about equal to that from ovaries from which the follicular fluid had been removed [13]

The practical clinical results are as yet not numerous enough to draw definite conclusions, but several cases are already known in which after amenorrhœa of long duration menstruation was induced by doses of 30 to 80 mouse units

We thought it justifiable to make such experiments and even to make the preparation available for practical use on a larger scale, as we are convinced, from experiments upon animals and upon ourselves, that *it is quite harmless* But this has only been possible on account of the stress laid from the outset upon the highest degree of purity (0 1 mg pro M U as a maximum) For such preparations do not have the least influence upon heart, respiration, or blood pressure, even when injected intravenously, whereas less pure preparations, such as have been described in England by Dickens and Dodds [14] towards the end of 1925, exert an appreciable lowering action upon blood pressure We think those authors are not quite justified in ascribing this to the hormone itself, it is more probably an effect of the impurities

EXOGENIC DERMATITIS *

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THE term "exogenic dermatitis" may be conveniently used to cover dermatitis due to any sort of external irritant The result of the application, over a long or short period of time, of external irritants to the skin is the appearance in the sufferer of dermatitis varying in all degrees, from a subjective discomfort without physical signs, through stages of redness that may be discrete and papular, purulent, or scaling, the formation of abnormal pigmentation, warts, up to even the development of ulcers or malignant carcinoma cutis

The classification of occupational dermatitis, or more widely of dermatitis due to external irritants, is a thankless and unsatisfactory task It has been attempted by Prosser White [1] but considering that the factors of cause, of time, of constitutional diathesis, and of chemical irritants all enter into the consideration of any one case, such an attempt, if at all accurate or exhaustive, can only be for the mental satisfaction of the writer, and it would be better for the development of this branch of dermatology that attention be given to elucidating the many factors of skin irritants present in civilised life rather than attempts be made to draw confines about an expanding subject

Predisposing Skin Types

There are two common types of abnormal skins, both of which are liable, to a greater extent than is usual, to give way rapidly before external irritants, first, the dry or xerodermatous skin, secondly, the skin that is abnormally moist from sweating In the ichthyotic skin there is an absence of natural grease which protects it, when exposed continuously to water, against maceration and against the effect of weak acids and alkalies This dry skin cracks easily *in east winds, such cracks become open sores in the* presence of irritating chemical dust, but it is among the abnormally moist patients, in the first instance those who work in dusty occupations, particularly cement dust, that the resistance of the skin is lowered by the formation of a poultice of moistened humus retained in the flexures of the hands, the feet, or behind the ears

There is a constitutional skin affection known as *cheiropompholyx* which brings a great element of difficulty into the diagnosis and proper adjudication of occupational skin affections This "disease" is characterised by an outcrop, often seasonal, of irritating minute blisters between the digits or on the palms themselves These blisters rupture leaving raw open sores, which scale and may become septic A skin that suffers from this condition is very sensitive to many external irritants, whether it be wind, sunlight, soap, water, formalin, or acids Such cases are readily healed, but may relapse also readily. To what extent a present cutaneous disability may be due to an occupationally started outcrop of cheiropompholyx months or years previously is a problem in every case difficult of solution A domestic cause acting recently may have been as potent of mischief as a trade irritant of an earlier date A constitutionally livid condition of the extremities may be responsible for a most engaging problem, as in the case of E D, aged 15, a van boy, who came to see me in the winter of 1924 with severely ulcerated chilblains of his hands We could hardly question that were he unemployed, and with his hands continually in his pockets, he would not be suffering from ulcerated chilblains, but, as he worked in winter daily, with uncovered hands that grasped the van rope, we have to concede an ætiological factor in his employment The lesson to be drawn is that an employer who persists in sending out into the streets a boy with purple hands is inviting a claim for occupational dermatitis that would be very difficult to rebut

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Diluted acids are used for the cleansing of lavatory basins and lavatory pans. The composition of furniture polishes, leather preservatives, and metal polishes is unknown to me, nevertheless, these are most certainly deleterious to the skin Quick drying enamels and paints, special rapid paint cleansers, storage batteries, disinfectants, and insecticides are all in perpetual household use, and any or all may explain an obscure dermatitis occurring in a woman of the lower or middle classes

Pattern Reaction

It is important to appreciate that the same cause operating on many skins may produce different results, varying either in kind or in degree Some bakers in every attack show a follicular purulent dermatitis, others never progress beyond an erythematous and scaling state of the hands and forearms Some cases of lime dermatitis recur rapidly on the arms and neck, in others the dermatitis becomes rapidly distributed *to all the flexures*, in a rarer group of cases a neglected attack will always be followed by a universal erythema

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Some skins ulcerate with extreme ease, and in such, where the patient works in cement, in chrome, in arsenic, or in fulminate of mercury, the rapid production of ulcers upon the fingers or eminences of the face is the pattern reaction of this constitutional type or diathesis In the trade such ulcers may be recognised as "chrome holes," or as "cement burns,"[2] or "powder holes," but these are not the common reactions to any of these irritants They are specific to the patient so affected They may be associated with and surrounded by, a red scaling condition of the skin due to the same cause, or such ordinary dermatitis may not develop at all H S developed these acute ulcers on his fingers ten days after his employment as a painted glass-maker; arsenic and cobalt were the two particular chemicals he handled. A special name, beautifully descriptive of some of these circular ulcers, with acute central sloughs, is "pigeonneau" in use by the French

Ætiological Difficulties

That industrial complexity has developed at a greater rate than the educational development of the workers is a factor that has long hindered the development of our appreciation of the full importance of the effect of external irritants on the skin As a rule our labourers are ignorant of the natural composition or destination of the materials they handle It may be that active curiosity is discouraged by their employers; it may be that many trade processes are necessarily kept secret from trade competitors, yet it is singular that a worker will handle a substance for 20 years and be satisfied to call it "red acid" and know no more about the stuff he has transported so continuously from barge to wharf

Another factor of difficulty is that the trade label of the worker may be most misleading as to the hazardous nature of his employment A boy was admitted under my care in St James's Hospital for a second attack of acute purulent dermatitis of his hands and feet He gave his occupation as that of "tea boy," and at first he was considered a case of dermatitis due to want of natural cleanliness, but on his second admission, when pressed he explained that his work was to carry continuously tins of freshly made tea throughout the day to the hundreds of workers employed in putting up a large new building in the City of London Cement dust and lime lay thickly about the scaffolds, ground, and stores He shook this alkali dust out of his shoes every night and the proper classification of his affection was an alkali dermatitis, an ætiology concealed by the designation of "tea boy"

I have elsewhere published at length my difficulty in unravelling an outbreak of dermatitis among miners which turned out to be alkali or lime dermatitis among underground compressed air tunnellers who burrowed in the London clay A baker may show red forearms due to the desiccating action of flour aggravated by the avulsive effect of dough upon the many hair follicles of his forearms Another baker's "itch" may appear as a follicular purulent *dermatitis*, while a third baker may show carcinoma cutis of the thumb due to the daily friction of a heated iron pole with which he regulates the oven fires[3] Under one occupation there may thus be three distinct hazards The patient may be most disinclined to help in a decision from a desire to carry on at work; particularly is this the case among countrymen Patients coming at different seasons of the year with a second, third fourth or even fifth attack of erythematous or bullous dermatitis of the hands and face due to hops, tomatoes, to chrysanthemums, or to lilies, may offer no explanation because a recognition of what they intuitively know is displeasing to them The different seasons at which various plants are handled in quantity is part of the everyday knowledge of the dermatologist

Factors making for Chronicity

It is reasonable to expect that, with the removal of the patient from the exciting cause, the cure of the skin condition will be rapid and satisfactory Ordinarily this is so, difficulty arises when there is a constitutional instability of the skin upon which the occupational or external factor has been added. This factor must be worked out with extreme care, as such cases often come before the judiciary under the Workmen's Compensation Act The underlying factors I would stress at present are chronic urticaria cheiropompholyx congenital ichthyosis and a neuropathic taint

J M suffered, and was treated and apparently cured of an alkali dermatitis due to cement Later he was brought to see me by the insurance company's doctor now suffering from a widespread urticarial eruption, starting on his back He had not resumed work after discharge from hospital treatment The rash became well-scratched into a condition of moist and scaling dermatitis of the extremities, and this was held by a medical referee to be, against my opinion a case of *relapsed occupational dermatitis*

M B suffered from an admitted attack of sugar dermatitis She completely recovered, and while away from work suffered from an acute outbreak of cheiropompholyx on the fingers This case, fortunately came before the same referee while the skin was apparently well Subsequently she was seen with an acute attack of cheiropompholyx, which she afterwards rapidly scratched into a condition of moist erythematous dermatitis of the forearms and hands From this she recovered, but was later admitted to an infirmary with a carbuncle of the lip, from this she died

When did the "causa causans" cease to act? Patients with congenital ichthyosis may suffer from intertrigo of the flexures winter after winter[4] or sometimes only in brilliant summers Such patients exposed to lime dust or to pitch dust may have these attacks aggravated, but the assessments of responsibility assigned to the different causative factors are always speculative

The nervous element has to be most carefully considered in a case of any duration for in the case of the neurotic patient—a type well recognised by the general physician—itching and scratching rapidly become an ingrained mental habit Dull and unattractive patients suffering from occupational dermatitis find themselves for the first time in their lives free from the toils of daily work in receipt of money and the subjects of compassionate interest of doctors nurses solicitors county court judges, relatives, and friends This limelight and drama are naturally intoxicating and attractive, and unconsciously the patient's attention is focused on their skin in a way we are familiar with in cases of hypochondriacism, of floating kidney, and mucous colitis

As irritable hearts excused men from the battlefield so an irritable skin excuses patients from the hazards and unpleasantness of industrial life and on this account all long-continued cases of dermatitis should have their palatal and tendon reflexes tested the presence of tremor and anæsthesia to pinprick noted, and the effect of sedative treatment tried The healing effect of impressive X ray treatment is excellent, but is far out of proportion to the therapy actually applied to the skin while the effect of a satisfactory financial settlement to these cases is immediate and gratifying

References—1 Proc Cong Industrial Accidents Amsterdam, 1925 p 336 2 THE LANCET 1917, ii, 365 3 O'Donovan W J Brit Med Jour 1922 ii, 401 4 Sequeira, J H. Diseases of the Skin 4th ed, p 113

well] as in male individuals, but seems to have no influence upon the nipple or mammary fat Finally it acts specially upon metabolism, but only in castrated females, not in castrated males [10]

Extracts prepared in quite similar manner from liver and other organs did not show any sign, or at most faint traces, of the various actions of Menformon mentioned above, even if the dose was increased a hundredfold Thus we think we are justified in regarding these results as typical for this female sexual hormone Mention may be made of the fact that we have been able to prepare from testes substances, also soluble in water, that are capable of inducing œstral changes The output was about equal to that from ovaries from which the follicular fluid had been removed [13]

The practical clinical results are as yet not numerous enough to draw definite conclusions, but several cases are already known in which after amenorrhœa of long duration menstruation was induced by doses of 30 to 80 mouse units

We thought it justifiable to make such experiments and even to make the preparation available for practical use on a larger scale, as we are convinced, from experiments upon animals and upon ourselves, that *it is quite harmless But this* has only been possible on account of the stress laid from the outset upon the highest degree of purity (0 1 mg pro M U as a maximum) For such preparations do not have the least influence upon heart, respiration, or blood pressure, even when injected intravenously, whereas less pure preparations, such as have been described in England by Dickens and Dodds [14] towards the end of 1925, exert an appreciable lowering action upon blood pressure We think those authors are not quite justified in ascribing this to the hormone itself, it is more probably an effect of the impurities

EXOGENIC DERMATITIS *

BY W J O'DONOVAN, M D, M R C P LOND,
PHYSICIAN IN CHARGE SKIN DEPARTMENT, LONDON HOSPITAL

THE term "exogenic dermatitis" may be conveniently used to cover dermatitis due to any sort of external irritant The result of the application, over a long or short period of time, of external irritants to the skin is the appearance in the sufferer of dermatitis varying in all degrees, from a subjective discomfort without physical signs, through stages of redness that may be discrete and papular, purulent, or scaling, the formation of abnormal pigmentation, warts, up to even the development of ulcers or malignant carcinoma cutis

The classification of occupational dermatitis, or more widely of dermatitis due to external irritants, is a thankless and unsatisfactory task It has been attempted by Prosser White,[1] but considering that the factors of cause, of time, of constitutional diathesis, and of chemical irritants all enter into the consideration of any one case, such an attempt, if at all accurate or exhaustive, can only be for the mental satisfaction *of the writer, and it would be better for the* development of this branch of dermatology that attention be given to elucidating the many factors of skin irritants present in civilised life rather than attempts be made to draw confines about an expanding subject

Predisposing Skin Types

There are two common types of abnormal skins, both of which are liable, to a greater extent than is usual, to give way rapidly before external irritants, first, the dry or xerodermatous skin, secondly, the skin that is abnormally moist from sweating In the ichthyotic skin there is an absence of natural grease which protects it, when exposed continuously to water, against maceration and against the effect of weak acids and alkalies This dry skin cracks easily in east winds, such cracks become open sores in the presence of irritating chemical dust, but it is among the abnormally moist patients, in the *first instance* those who work in dusty occupations, particularly cement dust, that the resistance of the skin is lowered by the formation of a poultice of moistened humus retained in the flexures of the hands, the feet, or behind the ears

There is a constitutional skin affection known as *cheiropompholyx* which brings a great element of difficulty into the diagnosis and proper adjudication of occupational skin affections This "disease" is characterised by an outcrop, often seasonal, of irritating minute blisters between the digits or on the palms themselves These blisters rupture leaving raw open sores, which scale and may become septic. A skin that suffers from this condition is very sensitive to many external irritants, whether it be wind, sunlight, soap, water, formalin, or acids Such cases are readily healed, but may relapse also readily. To what extent a present cutaneous disability may be due to an occupationally started outcrop of cheiropompholyx months or years previously is a problem in every case difficult of solution A domestic cause acting recently may have been as potent of mischief as a trade irritant of an earlier date. A constitutionally livid condition of the extremities may be responsible for a most engaging problem, as in the case of E D, aged 15, a van boy, who came to see me in the winter of 1924 with severely ulcerated chilblains of his hands We could hardly question that were he unemployed, and with his hands continually in his pockets, he would not be suffering from ulcerated chilblains, but, as he worked in winter daily, with uncovered hands that grasped the van rope, we have to concede an ætiological factor in his employment The lesson to be drawn is that an employer who persists in sending out into the streets a boy with purple hands is inviting a claim for occupational dermatitis that would be very difficult to rebut

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It is scarcely realised to what extent the modern home is, in fact, a small chemical factory It would be as well for a practitioner to run through the pages of a catalogue of a stores or of an Italian warehouse to bring to mind how many are the noxious agents that may come in contact with a normal or unduly sensitive skin of a person within the—ordinarily considered sheltered—domestic atmosphere. A housewife has her hands immersed in water for several hours a day, so that the *water maceration dermatitis* which is often seen in barmaids and hospital scrubbers may be seen too in the hands of the housewife herself. Dermatitis due to alkalies is a common occurrence due to the use of soda and soda preparations, to strong soaps, to chloride of lime for bleaching purposes after washing, and, as in the case of one patient, L H, to the manufacture of her own soap learnt in the back woods of Canada

Diluted acids are used for the cleansing of lavatory *basins and lavatory pans The composition* of furniture polishes, leather preservatives, and metal polishes is unknown to me, nevertheless, these are most certainly deleterious to the skin. Quick drying enamels and paints, special rapid paint cleansers, storage batteries, disinfectants, and insecticides are all in perpetual household use, and any or all may explain an obscure dermatitis occurring in a woman of the lower or middle classes

Pattern Reaction

It is important to appreciate that the same cause operating on many skins may produce different results, varying either in kind or in degree. Some bakers in every attack show a follicular purulent dermatitis, others never progress beyond an erythematous and scaling state of the hands and forearms Some cases of lime dermatitis recur rapidly on the arms and neck, in others the dermatitis becomes rapidly distributed to all the flexures, in a rarer group of cases a neglected attack will always be followed by a universal erythema

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References—1 Proc Cong Industrial Accidents Amsterdam, 1925 p 536 2 THE LANCET 1917, ii, 368 3 O Donovan, W J Brit Med Jour 1922 ii 401 4 Sequeira, J H Diseases of the Skin 4th ed p 113

Clinical and Laboratory Notes.

A CASE OF ACUTE ANAPHYLAXIS

By Leonard S Dudgeon, C M G, C B E, F R C P Lond,

PROFESSOR OF PATHOLOGY, UNIVERSITY OF LONDON

The details of the case about to be described are of such interest that I have decided to place them on record

The Case Related

A lady, a keen horsewoman, had suffered from horse fever and severe horse asthma since childhood On Dec 2nd 1926, I gave her by the intradermal method 0 1 c cm of normal horse serum Within three minutes of the injection a local blister developed followed by redness of the skin over a wide area of the arm in the vicinity of the serum injection, but no further inconvenience occurred She was not hypersensitive to any foods or pollens It was considered advisable to attempt desensitisation

On April 29th, 1927, nearly five months after the dermal injection of 1 drop of horse serum, I gave her at 5 P M 0 25 c cm of normal horse serum subcutaneously, and as far as I know the inoculation was entirely subcutaneous Almost immediately after the injection *blood-stained serum* escaped from the wound puncture, and within two minutes she felt faint and the pulse was rapid Within five minutes of the inoculation of the serum her condition was as follows There was œdema of the eyelids and very considerable œdema of the lips and face She was completely comatose with partially contracted pupils A continuous stream of clear, white frothy exudate was escaping from the mouth The breathing was rapid and stertorous, and the pulse could not be felt at the wrist, but a fluttering was perceptible over the cardiac area I gave her artificial respiration for 1 hour and 20 minutes, because if it was stopped for more than a few moments the cyanosis rapidly increased An injection of 1 in 10,000 adrenalin chloride (1 c cm) was given subcutaneously During the period required for filling the syringe and giving the injection her husband, who was alone with me during the whole of the most critical period of the attack, continued the artificial respiration

Very gradually the cyanosis lessened, the output of fluid from the lungs diminished, and the pulse became obvious at the wrist At the end of the time that artificial respiration was employed consciousness had returned and the pulse had considerably improved She then had a violent attack of vomiting which lasted off and on for about 20 minutes, followed by a feeling of intense cold which was partially relieved by warm applications to the body Hot drinks could not be taken because of the feeling of intense nausea which followed the violent attack of vomiting She was then removed to her own house in an ambulance, and cardiac stimulants were administered Inhalations of oxygen were given at frequent intervals for many hours, as it was found that they considerably relieved the cyanosis and respiratory distress

Within one hour of the injection of horse serum a diffuse mottled eruption spread all over the body, the colour of the rash fluctuating with the degree of cyanosis The rash persisted for about 12 hours and then gradually faded For seven hours after the inoculation her temperature, taken in the mouth and axilla, would not register above 95° F At 2 A M the temperature was 99 6° F , at 6 A M 100 4° F , from 10 A M to 2 P M 100° F , from 6 to 10 P M. 99 4° F , and then it fell to normal, at which it has remained ever since except on one occasion

Considerable abdominal distension occurred about midnight (about seven hours from the onset of the attack), it was relieved by means of 1 c cm of pituitrin subcutaneously and 2 oz of glycerine per rectum. The pulse-rate, which had remained during the night about 110 to 120, at 4 A M increased to 130 and 140 per minute together with considerable increase in the respiration-rate She was then given ¼ gr of morphia and 1 c cm of 1 in 10,000 adrenalin chloride From this point onwards a general improvement in her condition occurred which was maintained, and by 7 A M , or 14 hours from the time of the serum inoculation, the cyanosis was only just apparent, respirations were 30 to the minute, and the pulse rate was 100 The rash disappeared very gradually, although it had a tendency to reappear at the site of the injection of the serum in the arm for the next 24 hours Her general condition rapidly improved, and 48 hours from the onset she was suffering only from mental fatigue and bodily weakness

Five days after the injection of the serum the patient developed pain and considerable œdema of the arm spreading from the site of the inoculation, and accompanied by a mottled red rash confined to the same area, tenderness of the axillary glands, and a temperature of 99° F The local reaction was treated with complete rest for the arm and local applications of evaporating lead lotion In 48 hours the only evidence of this local reaction was slight tenderness at the site of the inoculation There have been no further local or general reactions, and three weeks from the onset of the attack she is none the worse for her very severe illness

Commentary

In my experience of acute anaphylaxis this case presents several features of great interest and importance

The fulminating onset was produced by the subcutaneous injection of 0 25 c cm of normal horse serum into an individual hypersensitive to "horse," who had received one previous injection of 0 1 c cm. of horse serum directly into the skin five months previously No subcutaneous, intramuscular, or intravenous injection of horse serum had been given on any previous occasion, and no other foreign protein had been administered The appearance of definitely blood-stained serum escaping from the needle puncture almost immediately after the injection of four drops of horse serum is a feature I have not heard referred to by any previous worker, and I have not seen it myself The blood-stained serum actually oozed from the wound puncture

The almost immediate onset of subcutaneous œdema, severe pulmonary œdema, extreme cyanosis, heart failure, and coma appeared to me to justify the conclusion that the patient's condition was hopeless within five minutes of the injection of 0 25 c cm of horse serum The patient's husband, who served all through the war, told me later that his wife's appearance brought back to his memory the first attack of mustard gas with which he had had a very full acquaintance I personally believe that artificial respiration saved her life The sections of lung which I have examined from cases of acute anaphylaxis in the human subject have shown a very diffuse œdema as the characteristic lesion This patient suffered from a very profuse watery discharge from her mouth for over an hour—in fact, she was being drowned in her own body fluids If it is ever my misfortune to have to treat a similar case on a future occasion I shall certainly employ artificial respiration, in spite of the fact that it is the most severe exercise with which I am acquainted

The last point of interest to which I must refer is that the patient has very little knowledge of her illness during the whole of the very acute period which lasted about 14 hours

In conclusion, my greatest thanks are due to Dr. L W Shelley, whose advice and help during the whole night when the patient was so seriously ill were of the utmost value

A NOTE ON THE
SPLEEN AND IMMUNITY

By William Susman, M D , C M Q U Ontario.

An investigation of amyloidosis which I have undertaken has suggested (1) that the spleen plays an essential rôle, and that splenic pulsations are a significant factor in the condition, and (2) that there is a similarity in the distribution of lesions in and about the Malpighian bodies in amyloid disease and in acute infections

As amyloid disease is usually due to a prolonged bacterial infection accompanied by suppuration, the probable connecting link between amyloidosis and acute infections is immunity If so, what is the splenic share in immunity, and what changes result from alterations in the rate and intensity of splenic pulsations ?

On the one hand, many workers, including L. Aschoff,[1] have shown that the spleen and the reticulo-endothelial system in general participate in the production of immunity Sharpey-Schafer and Moore [2] however have demonstrated that atropine will diminish and aqueous brain extract will augment, the rate and intensity of splenic pulsations With these observations before us we can investigate the effect of alterations in splenic pulsations on the production of immunity

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[1] Ergebn d inn Med u Kind , 1924, Bd xxvi

Experiment I

Twelve adult rabbits were immunised against *Bacillus typhosus* Four of them were used as controls, four others received accompanying injections of atropine, while the remaining four were inoculated at the same time with aqueous brain extract

The results may be summarised as follows (1) Serum of an animal injected with brain extract alone gave negative results. (2) Atropine injections lowered the agglutination titre (3) Brain extract in six days gave 4 times, in 11 days 23 5 times, and in 16 days 32 times the average titre obtained in the controls.

Experiment II

Adult mice were injected with pneumococcal broth sufficiently diluted to kill the controls in about four to six days One hundred animals were used as controls; a further 116 were also injected with brain extract. The animals treated with brain extract lived on an average about three times as long as the controls Approximately 40 per cent of them outlived all the controls, and 17 per cent to 25 per cent lived over four weeks

A further group of 20 was divided into five sections All received a pneumococcal injection while sections of the five were also injected with either glucose peptone cream or brain extract All animals in the four control sections—i e those which received pneumococcal broth, broth and glucose, broth and peptone, and broth and cream—gave similar results, whereas all in the pneumococcal broth and brain extract section were alive on the fifty-seventh day

Conclusions

1 Brain extract induces an increased immunity reaction, as indicated (*a*) in mice actively infected with virulent pneumococci (*b*) in the increased agglutination titre in rabbits immunised against *B typhosus.* 2 It does not act on a protein-shock basis 3 That the spleen is influenced is at present hypothetical

This investigation was carried out under a grant from the Government Grant Committee of the Royal Society I am also indebted to Prof Shaw Dunn for supplementing the available supply of experimental animals

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[2] Jour Physiol, 1896, xx

Medical Societies.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE

A MEETING of this Society was held on May 19th in the rooms of the Medical Society of London Dr ANDREW BALFOUR the President in the chair

Dr A T STANTON (Chief Medical Adviser to the Colonial Office) opened a discussion on the

Organisation of Medical Research in the Tropics

and laid before the meeting a scheme of representation One of the general criticisms which had been directed against such a scheme was he said, that it was bureaucratic This might be taken to mean that governments should not concern themselves with research a view with which he had no sympathy: indeed he considered that the encouragement of research was one of the principal functions of a government, seeing that it was concerned with the maintenance of a high standard of health among the people He would place the research under a medical department and that again was a subject of controversy some contending that it should be conducted outside the medical department which ought to concern itself only with such subjects as sanitation and the treatment of disease In the British tropical colonies there were 60 to 70 officers who could be designated medical research workers, chiefly distributed over the East and West African colonies, Ceylon the West Indies, and the Western Pacific areas If by research was meant any work intended to add to knowledge of the causation prevention and treatment of disease, then all tropical medical workers were research workers Medical graduates who went to the tropics were of an inquiring mind, and whatever the particular sphere of activity they went to fill, research in the proper sense of the word might be undertaken by them

An important point which was frequently discussed, said Dr Stanton, was as to whether medical research of a tropical order ought to be done in the tropics, or whether it could be better carried out in this country Having spent most of his medical life in the tropics, he had a leaning towards the former view, though he agreed that certain lines of research might be more effectively pursued in this country One of the disadvantages in the past, as most tropical investigators had found, was their lack of contact with those doing similar work in this country though no tropical worker had appealed in vain to the British Museum authorities on such subjects as entomology Latterly the Medical Research Council in England had been anxious to extend its activities to the tropics This seemed to be a good time therefore, for establishing a liaison between tropical organisations and research agencies in this country, and the nucleus of the scheme which he submitted was the formation of a joint committee of the Colonial Office and the Medical Research Council to receive the name the "Colonial Medical Research Committee." The endeavour would be to establish contacts, through this committee, with all the organisations in this country concerning themselves with medical research problems of the tropics and perhaps with those in other countries. and with international organisations, such as the League of Nations. the International Health Board, and the Rockefeller Foundation Cooperating in this work there should be such bodies as the Royal Society, the schools and societies of tropical medicine, the research institutes the Lister Institute, the Committee of Civil Research the Bureau of Hygiene and Tropical Diseases, and the Imperial Bureau of Entomology

A very important question went on Dr Stanton. was how to disseminate information and reports on research work and in this connexion there was already in existence a bureau of tropical diseases which had well carried out its function His suggested committee would act through a medical secretariat working on a whole-time basis, who would maintain the needed contacts and generally attend to the question of tropical diseases Dr Stanton said he fully realised that the mere provision of machinery did not necessarily mean anything, that the personnel was the great requirement, but, given a personnel of the necessary quality and calibre, it was all the better to have an efficient organisation

Discussion

Prof WARRINGTON YORKE (Liverpool School of Tropical Medicine) said that the first question to be asked was whether the present state of affairs was or was not satisfactory. If it was not. what was wrong? To judge by the size and number of papers which were contributed on tropical subjects, the state of affairs might be considered actively favourable, but the opinion he had derived from reading and summarising these papers for publication was that far too much was published He was inclined to say that more work and less printing would be a good thing He would not discourage workers but would ask that their investigation should be more careful, thoughtful and critical, and that observations committed to paper should be written in full cognisance of what had been done before Research done without due care and without proper controls not only wasted the time of the reader, but might very well be mis-

Clinical and Laboratory Notes.

A CASE OF ACUTE ANAPHYLAXIS

By Leonard S Dudgeon, C M G, C B E,
F R C P Lond,
PROFESSOR OF PATHOLOGY, UNIVERSITY OF LONDON

The details of the case about to be described are of such interest that I have decided to place them on record

The Case Related

A lady, a keen horsewoman, had suffered from horse fever and severe horse asthma since childhood On Dec 2nd 1926, I gave her by the intradermal method 0 1 c cm of normal horse serum Within three minutes of the injection a local blister developed followed by redness of the skin over a wide area of the arm in the vicinity of the serum injection, but no further inconvenience occurred She was not hypersensitive to any foods or pollens It was considered advisable to attempt desensitisation

On April 29th, 1927, nearly five months after the dermal injection of 1 drop of horse serum, I gave her at 5 P M 0 25 c cm of normal horse serum subcutaneously, and as far as I know the inoculation was entirely subcutaneous Almost immediately after the injection *blood-stained serum* escaped from the wound puncture, and within two minutes she felt faint and the pulse was rapid Within five minutes of the inoculation of the serum her condition was as follows There was œdema of the eyelids and very considerable œdema of the lips and face She was completely comatose with partially contracted pupils A continuous stream of clear, white frothy exudate was escaping from the mouth The breathing was rapid and stertorous, and the pulse could not be felt at the wrist, but a fluttering was perceptible over the cardiac area I gave her artificial respiration for 1 hour and 20 minutes, because if it was stopped for more than a few moments the cyanosis rapidly increased An injection of 1 in 10,000 adrenalin chloride (1 c cm) was given subcutaneously During the period required for filling the syringe and giving the injection her husband, who was alone with me during the whole of the most critical period of the attack, continued the artificial respiration

Very gradually the cyanosis lessened, the output of fluid from the lungs diminished, and the pulse became obvious at the wrist At the end of the time that artificial respiration was employed consciousness had returned and the pulse had considerably improved She then had a violent attack of vomiting which lasted off and on for about 20 minutes, followed by a feeling of intense cold which was partially relieved by warm applications to the body Hot drinks could not be taken because of the feeling of intense nausea which followed the violent attack of vomiting She was then removed to her own house in an ambulance, and cardiac stimulants were administered Inhalations of oxygen were given at frequent intervals for many hours, as it was found that they considerably relieved the cyanosis and respiratory distress

Within one hour of the injection of horse serum a diffuse mottled eruption spread all over the body, the colour of the rash fluctuating with the degree of cyanosis The rash persisted for about 12 hours and then gradually faded For seven hours after the inoculation her temperature, taken in the mouth and axilla, would not register above 95° F At 2 A M the temperature was 99 6° F, at 6 A M 100 4° F, from 10 A M to 2 P M 100° F, from 6 to 10 P M 99 4° F, and then it fell to normal, at which it has remained ever since except on one occasion

Considerable abdominal distension occurred about midnight (about seven hours from the onset of the attack), it was relieved by means of 1 c cm of pituitrin subcutaneously and 2 oz of glycerine per rectum The pulse-rate, which had remained during the night about 110 to 120, at 4 A M increased to 130 and 140 per minute together with considerable increase in the respiration-rate She was then given ¼ gr of morphia and 1 c cm of 1 in 10,000 adrenalin chloride From this point onwards a general improvement in her condition occurred which was maintained, and by 7 A M or 14 hours from the time of the serum inoculation, the cyanosis was only just apparent, respirations were 30 to the minute, and the pulse-rate was 100 The rash disappeared very gradually, although it had a tendency to reappear at the site of the injection of the serum in the arm for the next 24 hours Her general condition rapidly improved, and 48 hours from the onset she was suffering only from mental fatigue and bodily weakness

Five days after the injection of the serum the patient developed pain and considerable œdema of the arm spreading from the site of the inoculation, and accompanied by a mottled red rash confined to the same area, tenderness of the axillary glands, and a temperature of 99° F The local reaction was treated with complete rest for the arm and local applications of evaporating lead lotion In 48 hours the only evidence of this local reaction was slight tenderness at the site of the inoculation There have been no further local or general reactions, and three weeks from the onset of the attack she is none the worse for her very severe illness

Commentary

In my experience of acute anaphylaxis this case presents several features of great interest and importance

The fulminating onset was produced by the subcutaneous injection of 0 25 c cm of normal horse serum into an individual hypersensitive to "horse," who had received one previous injection of 0 1 c cm. of horse serum directly into the skin five months previously No subcutaneous, intramuscular, or intravenous injection of horse serum had been given on any previous occasion, and no other foreign protein had been administered The appearance of definitely blood-stained serum escaping from the needle puncture almost immediately after the injection of four drops of horse serum is a feature I have not heard referred to by any previous worker, and I have not seen it myself The blood-stained serum actually oozed from the wound puncture

The almost immediate onset of subcutaneous œdema, severe pulmonary œdema, extreme cyanosis, heart failure, and coma appeared to me to justify the conclusion that the patient's condition was hopeless within five minutes of the injection of 0 25 c cm of horse serum The patient's husband, who served all through the war, told me later that his wife's appearance brought back to his memory the first attack of mustard gas with which he had had a very full acquaintance I personally believe that artificial respiration saved her life The sections of lung which I have examined from cases of acute anaphylaxis in the human subject have shown a very diffuse œdema as the characteristic lesion This patient suffered from a very profuse watery discharge from her mouth for over an hour—in fact, she was being drowned in her own body fluids If it is ever my misfortune to have to treat a similar case on a future occasion I shall certainly employ artificial respiration, in spite of the fact that it is the most severe exercise with which I am acquainted

The last point of interest to which I must refer is that the patient has very little knowledge of her illness during the whole of the very acute period which lasted about 14 hours

In conclusion, my greatest thanks are due to Dr. L W Shelley, whose advice and help during the whole night when the patient was so seriously ill were of the utmost value

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A NOTE ON THE SPLEEN AND IMMUNITY

By William Susman, M D, C M Q U Ontario.

An investigation of amyloidosis which I have undertaken has suggested (1) that the spleen plays an essential rôle, and that splenic pulsations are a significant factor in the condition, and (2) that there is a similarity in the distribution of lesions in and about the Malpighian bodies in amyloid disease and in acute infections

As amyloid disease is usually due to a prolonged bacterial infection accompanied by suppuration, the probable connecting link between amyloidosis and acute infections is immunity If so, what is the splenic share in immunity, and what changes result from alterations in the rate and intensity of splenic pulsations ?

On the one hand, many workers, including L. Aschoff,[1] have shown that the spleen and the reticulo-endothelial system in general participate in the

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[1] Ergebn d inn Med u Kind, 1921, Bd xxvi

ROYAL SOCIETY OF MEDICINE.

SECTION OF OBSTETRICS AND GYNÆCOLOGY.

A MEETING of this Section was held on May 20th, Prof A. DONALD, the President, in the chair Mr. A. S PARKES read a paper on the

Internal Secretions of the Ovary.

The active life of the uterus he said, *might be* regarded as a series of preparations for the fertilised ovum. the follicular phase, associated with maturation and rupture of the follicles, was followed by the luteal phase, associated with *development of the* corpus luteum In the rat the preparation made for the ovum was very slight. but *in the dog and rabbit* the luteal phase was so marked that it produced a pseudo-pregnancy—involving accessory organs like the breast—when fertilisation was absent When involution of the corpus luteum ended the *pseudo-pregnancy*, *there might* be phenomena characteristic of true *parturition—e g., lactation and nest-making.* In woman, probably, the luteal phase dominated the cycle menstruation being a uterine degeneration after pseudo-pregnancy Ovulation was supposed to occur 13–15 days after the onset of the previous menstruation. Development of the *corpus* luteum then induced development of the uterus, and its involution after about ten days caused the retrogressive changes producing the menstrual flow, which might be described as the abortion of unwanted decidua Experiment proved the ovary *to be essential for the early development of the* accessory organs, for their cyclic activity in the absence of pregnancy, and for maintaining pregnancy and mammary development Its control was probably hormonic as transplantation would prevent the bad results of oöphorectomy

Œstrus-producing *qualities in any* substance could now be detected easily by examining vaginal smears The first definite œstrus-producing extract was obtained by Allen and Doisy (1922) from liquor folliculi. and this gave rise to the theory that maturation of the follicle was the direct cause of œstral changes *But the hormone had been found in* ovarian stroma, in fluid from hollow corpora lutea, and in placenta, and the œstral cycle *persisted after* obliteration of the follicles by X rays The functions of the corpus luteum hormone were *sensitisation of the* uterus after ovulation, maintenance of pregnancy, inhibition of the œstrus during *pregnancy. and* development of the mammary glands; but extracts of corpus luteum had been far less successful *than* œstrus-producing extracts, and so far had performed only one function of the intact *corpus—namely*, inhibition of œstrus

There were thus available an œstrus-inhibiting and—in very impure state—an œstrus-producing hormone (*œstrin*) Injection of œstrin during the luteal phase of the *infertile cycle or during* pregnancy or lactation, might override the domination of the corpus luteum bringing animals into œstrus and terminating pregnancy The converse might also work. Œstrin was *probably* responsible for maturation of the Graafian follicles It was also highly probable that *injection of œstrin* might remedy conditions due to low ovarian activity; whilst the hormone of corpus luteum would be useful in those cases of amenorrhœa premature birth or mammary deficiency in which *the corpus luteum* was at fault. More work must be done, however, before this extract could be clinically available Œstrin had been used for amenorrhœa sterility. and delayed parturition Marshall and Dixon s work suggested that parturition was caused by excitation of the pituitary due to the ovarian activity following retrogression of the corpus luteum It was doubtful if œstrin would be of value for cases of infantile uterus The sudden hypertrophy *it caused* in the infantile uterus of the immature rodent was due to an effort to come into œstrus, and seemed to be purely temporary

The PRESIDENT remarked that in menopausal cases he had never seen any benefit from the use of ovarian extract

Prof. BLAIR BELL pointed out that the corpus luteum persisted in the *psychological pseudo-*pregnancy of girls who had "gone wrong" and missed two or three periods from fright It should be called the "corpus luteum of pseudo-pregnancy." After the trial of a recent case of alleged criminal abortion, he *had examined* sections of the uterus of the woman who died, and it was obvious that she had never been *pregnant at all*, and that the corpus luteum *found in* her ovary was the persistent corpus luteum of pseudo-pregnancy. In experimental animals the follicular elements all lay on the surface and could be removed, *leaving only the interstitial cells*; left alone, these *could keep* the uterus active and maintain sexual *appetite and œstrus Observations* must not be confined to the pelvis; intense destructive atrophy of the ovary and uterus followed clamping of the pituitary stalk.

Mr. A W BOURNE had tried œstrin in three cases *for the induction* of labour without result One patient *had had a show and some pains after 20 rat-units*, but it passed off, and a second injection had no result. The injections were very painful, and in his opinion the dosage was inadequate He mentioned a case of *sterility in which* injection had produced all the symptoms of menstruation, together with a very copious clear mucous discharge, but no bleeding

Mr. PARKES, in reply, pointed out that an active ovarian extract had only been available for three years. Recent work on extraction of œstrin in a water-soluble medium might obviate the pain of injection. In late pregnancy large doses were required to *produce abortion, since the active corpus* luteum had to be overridden

Mr. LEONARD PHILLIPS reported a case of

Spontaneous Separation of the Cervix in Labour.

The patient was a primigravida aged 44 in whom a breech presentation had been turned in the antenatal *department* Labour was induced by bougies at the thirty-seventh week because *the head* did not engage readily. After six hours of good pains *the* cervix *had* dilated sufficiently to admit two fingers but was rigid. Twenty-one hours later there had been no further dilatation, although chloral, bromide *morphia, and* scopolamine had been freely given After 36 hours the general condition was good and *the head almost on* the perineum, an œdematous lip of cervix was palpable behind it The os still admitted just two fingers Two hours later forceps were *applied on* account of fœtal distress, but as soon as the hand entered the vagina—before the forceps blade was passed—a ring of cervix slid out of *the vagina* The child was easily extracted and did well The puerperium began quietly but *after* four hours abdominal distension developed, *the pulse* was *140*, and the temperature was 100° F On examination no rupture was found *a raw area on the* anterior vaginal wall was cauterised and painted with 1 per cent violet green while the vagina was plugged with gauze soaked in *1/500 flavine A blood* culture showed pure growth *of Bacillus coli* The patient died four days after delivery.

It appeared subsequently, said Mr. Phillips that the œdematous "*posterior lip*" was really the anterior lip of a cervix already separated and imprisoned between the fœtal head and the *sacrum*. In this case patience in the presence of a slowly dilating cervix had had a disastrous result The limitations of *antenatal* care were illustrated The lessons were· the necessity. under scopolamine-morphine narcosis of frequent vaginal examinations. and the importance of considering Cæsarean section in cases of slow dilatation in elderly primiparæ A post-mortem was *refused, but it* was clear that there was no rupture of the uterus and no *peritonitis* merely a septicæmia from infection of the laceration

Dr J. P HEDLEY *said* that so rare a case as this did *not* justify alteration of the rule that vaginal examinations *should be as few* as possible

Mr EARDLEY HOLLAND mentioned cases of evulsion of the cervix from application of forceps, or pressure in cases of contracted pelvis, and spoke of the utility of rectal examinations for finding the state leading, it certainly did not advance knowledge Often when a man had been working at a particular subject and then took a period of leave after sending his contribution, no more was heard of the subject after his return to duty

There were, said Prof Yorke, three types of people concerned in the investigation of medical science in the tropics (1) those sent out from time to time on special commissions, (2) the staffs of the various laboratories scattered through the tropical colonies, and (3) those whose prime duty was the diagnosis and treatment of disease, but who, with commendable enthusiasm, found time and opportunity to do some research The problem of the isolated worker was one of some difficulty It was difficult to assist a man who was working by himself, he had little literature, and small opportunity of knowing what others were doing Such a man, however, should certainly be encouraged, and the committee suggested by Dr Stanton would be a useful channel for providing help It was chiefly, however, from the laboratory worker that advance must be looked for, as only he had the special training and equipment needed Still, the laboratory often lacked the necessary material, and was cut off from intercourse with clinicians. He would not separate the research from the clinical sides, especially as the aggregation of workers together would counteract the danger of stagnation

The director of such a laboratory was the person who made for the success or otherwise of the establishment, and seniority of service might be of little value as a criterion of fitness for such posts In order to get the right men for this work it was necessary to make the conditions of service attractive, and certainly they should not labour under any financial disability Leave should be granted periodically so that men could study and keep themselves abreast of new knowledge, and the staff should be sufficient to ensure continuity in a piece of work while a member of the staff was on leave

Sir LEONARD ROGERS remarked that it was the function of editors of scientific journals to refuse articles which were below the necessary standard He went on to speak of the tropical research done under the Government of India India was fortunate in having what it was desired the tropical colonies should have Candidates for the Indian Medical Service had first to work for several years as probationers, and were thus required to prove their worth before being granted a position in the laboratory This created a class of men suitable to fill vacancies in laboratories anywhere Sir Leonard Rogers described how merchants in India were induced to provide money for research, having seen that this research meant less sickness among their employees In order that there could be advances, he said, it was of the utmost importance that there should be continuity of effort.

Prof R T LEIPER said that the scheme put forward by Dr Stanton was based on a colonial unit, and he saw no prospect under such a scheme of attaining the integration of research work throughout the tropics which some had been looking forward to for many years He favoured an imperial scientific service, with a medical side, especially as laboratories in the colonies were concerned with the routine work as well as research, and research would always be the Cinderella of the laboratory so long as it was under the direction of the medical services He would prefer to see research attached to the section of medical education, and investigators should have more freedom than was promised in the scheme now outlined At present there was no responsible body in the tropics to supervise this work He did not agree with Prof Yorke's remarks about the literary output of workers in tropical diseases, it was good for a man to commit his ideas and his findings to paper, for only thus would he distil down what he had been doing and become definite with an eye to possible criticism

Colonel F. HARVEY spoke of the organisation of research in the army At the War Office there were special directors of hygiene and pathology Sir William Leishman was the first to hold such office, and it was largely through his efforts that this organisation was instituted There were also deputy directors in all the army stations abroad The drawback was that the work concerned only the British soldier, the investigators were not brought into contact with the enormous material presented by the native races At the War Office there was, too, a pathology advisory committee on which the Medical Research Council and the Royal Society of Tropical Medicine and Hygiene were at present represented This committee kept in close touch with the medical staff in the tropics There was also a bureau in connexion with the army, and the men on the medical staffs were kept supplied with technical literature Where necessary, reports sent home were criticised and returned He agreed with Prof Leiper that publication of work should be encouraged as much as possible

Dr P H MANSON-BAHR did not agree that the results of work should be suppressed, opinions changed with time, and if it had not been for the desire to publish work which seemed to hold out promise, some momentous discoveries would not have been made when they were Moreover, it was the custom when making a new appointment to have regard to what a candidate had written, and, as an index of his activity and ability, this record could not well be ignored At present the worker in the laboratory was penalised financially in comparison with the man who was diagnosing and treating disease The personal factor must always be given a high place, no amount of official organisation could make up for defects in the man who actually did the work A combination of personal fitness and adequate training with sufficient equipment should be sought for this work Some official was needed who would travel round and see what everyone was doing He agreed that the laboratory doing routine work was not the place in which to conduct research

Dr DE LANGEN (Holland) deprecated the attempt to keep scientific research within recognised boundaries, it was always liable to take an unexpected turn He did not think English workers published too much, and they certainly had the faculty of apt and succinct expression He would like to see an international organisation established in connexion with medical research and a freer international scientific exchange

The Rev Mr CHESTERMAN pleaded that the profession should accept the help of missionary hospitals in the tropics, especially as missionaries could secure labour and inquiries at practically no expense He felt sure missionaries would do all they could in helping forward the work

Dr C M WENYON said that much good work had resulted from the central organisation allotting certain work to people specially appointed Perhaps the scheme set out by Dr Stanton would eventually become international An offshoot of the League of Nations organisation was at present conducting a research in Uganda Of course, the highest ideal was to follow science for its own sake, keeping above all human frailty, but for the advancement of knowledge, as human beings were at present constituted, the element of competition perpetuated keen activity In research work it sharpened the critical faculty and led to a further development of the laboratory instinct That spirit was probably answerable for three separate commissions being at present at work on kala-azar

The PRESIDENT remarked that no one had said what was the best type of local organisation for medical research beyond Prof Leiper's suggestion to link it with the medical education side He spoke of the autonomous research work going forward in Trinidad Incidentally, he said that it had been decided to name the Society's new house "Manson House," in memory of Sir Patrick Manson

Diphtheroid bacilli were present in large numbers in the mouth The condition had cleared up, though very bad when he saw it first

Dr GRAY considered the case was more like dermatitis vegetans than true pemphigus vegetans Some of the conditions to which the former name was given were simply fungating granulomatous lesions, without bullous or pustular formation

Dr H G ADAMSON said that one point against the diagnosis of pemphigus vegetans was that the patient had had iodide of potassium If this drug was given to a patient who had pemphigus it always made the bullæ worse, it even brought bullæ out where they were not evident before In one or two cases he believed pemphigus had been started by the local application of tincture of iodine

Dr LITTLE showed a case of

Dermatitis Herpetiformis

The patient had an acute eruption of vesicles on the chest back and buttocks In South Africa he had had three injections of his own blood, and temporary improvement followed them Relapse, however, occurred and the patient was advised to come to this country He now had large bullæ and very characteristic lesions in the mouth, with some old scarring. the result of former lesions He could produce vesicles in a short time merely by exerting pressure on the skin Five minims of liquor arsenicalis thrice daily had brought about a great improvement in the eruption

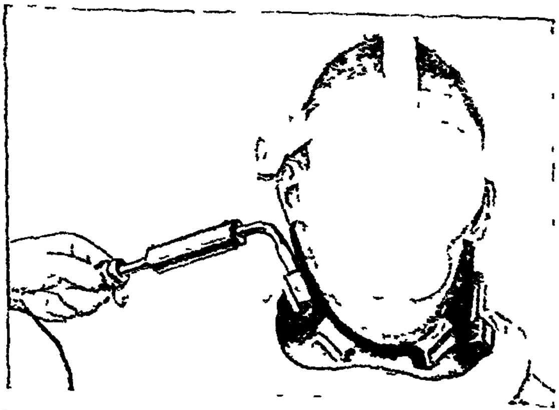
Dr GRAY was inclined to think that the condition was pemphigus foliaceus, the question could be put to the test by trying to elicit Nikolsky's sign

Dr HEATH spoke of a similar case under his care which was kept under control by means of arsenic

New Inventions.

ELECTRIC-HEATED RADIUM WAX-KNIFE

RADIUM when applied at a distance from the skin in inoperable and post-operative cancer work, according to the principles of Regaud, of Paris and other continental workers is supported by means of wax moulds fitting over the part The construction of these involves considerable manipulation, and to facilitate this the electric wax-knife has been designed Repeated heating of an ordinary wax-knife is both tedious and unsatisfactory The wax-knife shown is kept constantly hot by means of an electrical resistance surrounding the upper part of the blade The current (240 volts) is obtained from the ordinary room supply through an insulated wire with socket The illustration shows the instrument in use It can be obtained from the Medical Supply Association, 167, Gray's Inn-road London, W C.



ARTHUR B SMITH, M.B, F R C S E.
London, W SYDNEY M SMITH, M B, Ch B. Edin

Reviews and Notices of Books.

VENEREAL DISEASES

Treatment of Venereal Diseases in General Practice. By E T BURKE, D S O, M.B, Ch.B Glasg, V D Officer to the County Borough of Warrington: Member of Council, Medical Society for the Study of Venereal Disease London: Faber and Gwyer, Ltd 1927 Pp 162 5*s*

THIS work sums up for the general practitioner the minimum treatment required and the standard and tests of cure for both syphilis and gonorrhœa Dr. Burke deprecates half-measures in the treatment of either disease, holding that the practitioner who is not prepared to deal thoroughly and intensively with the case from start to a satisfactory finish had better send his patient to an expert for treatment either privately or to the special clinic He gives accordingly seven useful and detailed "schemes of treatment for syphilis," one for each stage or type of the disease. Any practitioner who aspires to treat syphilis well cannot do better than follow these schemes While giving a good chapter on the preparations and modes of administering mercury, the author in his introduction says that he has discarded the use of this drug for over two years, regarding it as "obsolete as is sarsaparilla" The chapter on the treatment of congenital syphilis is excellent, emphasis is laid on the necessity of continued treatment and observation of these cases. The section of the book on gonorrhœa is modern and sound; the danger of making gonorrhœal neurasthenics is mentioned, but at the same time the need is insisted on for careful treatment When the patient appears to be cured observation over a period of time is highly desirable Dr Burke is a believer in the value of vaccines and of electrargol in the treatment of gonorrhœa and its complications

The *obiter dicta* on syphilis and gonorrhœa at the end of each section are usually sound and often amusing; some, however, are a little cheaply clever and scarcely worthy of the book Seven appendices give in detail the manner of collection of the various materials for pathological tests required in V D work, and there is a final chapter upon urethral dilators It is well worth while for every practitioner to buy this book—for guidance if he is in the habit of treating V.D, but in any case to be able to explain to his patients the length and adequacy of modern treatment of these diseases, and to assure them of the excellent prognosis where treatment is thorough and even enthusiastic.

Les Syphilis Viscerales Tardives Par H GRENET, R LEVENT, and L PELLISSIER Paris: Masson et Cie 1927 Pp 378 Fr 32.

THE authors believe that many cases of late syphilis occur owing to insufficient treatment of early syphilis by those doctors who rely on a negative W R as proof that infection is non-existent They quote Scholz-Sadebeck, of Breslau who finds that all cases of syphilis that have been adequately treated with mercury from 1900 to 1921 show a much smaller proportion of tertiary syphilis than was formerly seen; they believe that with the now general administration of salvarsan there should be an even smaller number of tertiaries in future. The authors find that in visceral scleroses syphilis plays an essential but not an exclusive part, and that among other associated factors alcoholism is particularly active The third chapter contains an admirable description of the macroscopic and microscopic findings in tertiary syphilis Long and detailed accounts are given of the various heart lesions of late secondary or tertiary syphilis stressing the variety of the effects of the spirochæte on the heart muscle valves, and blood-vessels A separate chapter is given to aortitis We are also reminded that though aortitis is found frequently from 12 to 20 years after the date of infection yet it is probable that the lesion is often present but causing no gross symptoms at a much of the cervix There was often too much reluctance to try manual dilatation

Mr F OXLEY referred to a case in which the cervix had come away after a strong dose of pituitrin

The PRESIDENT said he thought the accident in this case was largely due to the narcosis, which enabled a patient to stand a great deal of pressure without any reflex disturbance.

Mr PHILLIPS, in reply, said he had often performed manual dilatation of the cervix, but never with the head in the pelvic brim It was quite difficult enough to diagnose some conditions vaginally, and by rectal examination they were sure to be missed

A Theory of the Decidual Reaction

Mr EVERARD WILLIAMS, in describing a patient in whom pregnancy had twice occurred in the tubes, brought forward the new theory that the formation of decidual cells was the primary event and that it determined where the ovum would be embedded This theory explained why normally the ovum was embedded in the uterus and how it was that decidual cells were found elsewhere, present theories failed to do this Ovarian pregnancy was much more common than was at one time believed, and a decidual reaction had been recorded in the peritoneum, the ovary, and the Fallopian tube, in a subperitoneal fibroid and further afield

Dr T WATTS EDEN said that the so-called decidual cells found outside the uterus were simply enlarged connective tissue cells, and not comparable to the true decidual reaction, which included enormous hypertrophy of the whole membrane and glandular and vascular changes

SECTION OF DERMATOLOGY

A MEETING of this Section was held on May 19th, Dr J H SEQUEIRA, the President, in the chair

Dr LOUIS SAVATARD (Manchester) read a paper on

Ichthyosis and Cancer of the Skin,

with special reference to mule-spinner's cancer He said that xeroderma pigmentosum could be regarded as a precancerous dermatosis, as in this rare disease the supervention of cancer was the rule, but the fact that xeroderma simplex, or ichthyosis simplex, was also a fertile soil for malignant growths was insufficiently recognised Ichthyosis he regarded as an important factor predisposing to cancer of the skin In some cases of cutaneous cancer, by adopting a routine examination of the whole skin, he had found lesions unsuspected by the patient, and in a number there was associated ichthyosis, especially where a carcinoma had arisen on a keratotic condition The keratosis was probably secondary to the ichthyosis All types of carcinoma might develop on keratosis, indeed, keratosis was the first clinical sign of a squamous carcinoma Dr Prosser White, of Wigan, had described in mule-spinners a condition of the skin which he had named "shagreen skin," but Dr Savatard had not noticed this peculiarity among the mule-spinners of Manchester whom he had seen, and submitted that this type of skin was merely an ichthyosis Ichthyosis seemed to be fairly common in Lancashire, in an examination of 400 operatives he had found an incidence of 5 per cent Among 400 mule-spinners of very variable ages whom he had inspected at their work he had found 20 with ichthyosis, in 10 of whom the condition was well marked Two had suffered from cancer of the scrotum His investigation had convinced him that ichthyosis was an important ætiological factor in mule-spinner's cancer, and he regretted that the Departmental Committee had stated, after its 1925 inquiry, that without exposure to mineral oils there would be no mule-spinner's cancer Dr J Robertson, of Darwen, had arrived at a very different conclusion after independent inquiry

Dr A WHITFIELD thought that Dr Savatard ascribed an undue importance to ichthyosis, though admittedly the ichthyotic skin was a badly nourished skin, especially in the absence of true maturity of the horny cell and formation of grease The ichthyotic patient started life with that aspect of senility He had not seen malignant keratosis in the keratotic subject

Dr GRAHAM LITTLE said he would have thought it rare for carcinomatous changes to occur in senile keratosis

Dr H MACCORMAC said it had always seemed to him that there was a tendency for the prickle-celled type of cancer to originate in some definitely pre-carcinomatous condition In some cases he saw during the war, particularly in Australians, cancer had developed on exposed sites following long periods in tropical sunshine Senile keratosis was a term which was applied by different dermatologists in different ways

Dr A M H GRAY said it should be an easy matter to determine how many cases of scrotal carcinoma occurred in men who did not work with oils, tar, pitch, or soot He believed it was rare to find scrotal carcinoma unassociated with those occupations

Dr SYDNEY THOMSON said that among many ichthyotic patients he had not seen a warty growth of any sort Ichthyosis had a well-marked topographical distribution, but senile skin had not

Dr H W BARBER said that a point worthy of consideration was the association of multiple superficial basal-celled carcinoma with psoriasis, as pointed out by Dr Gray and Dr Little He asked whether psoriasis were more likely to occur in dry-skinned people than in those whose skin was normal

Dr SAVATARD, in reply, said he recognised that oil, tar, and soot produced cancer, but if careful examination of the whole skin were carried out as a routine he thought cancer would be found more frequently in persons having an ichthyotic skin

Dr. J M H MACLEOD showed a patient who had

Dermatomycosis due to Monilia

He had brought the case, he said because it was important to report such a condition when its true nature had become certain, there was much confusion about the dermal states produced by yeast-like organisms

This woman had, between two or three of her fingers, white patches a quarter of an inch across, which were sodden, as in trichophytic infections At first Dr MacLeod attributed the condition to epidermal trichophyton The scrapings from it showed mycelial shreds, they were coarse and did not branch, and hence he became suspicious as to the correctness of his diagnosis The organism turned out to be monilia At a temperature of 25° C it formed within 18 hours a whitish or creamy glistening culture, later becoming almost granular In the early cultures no mycelia were seen, but there were oval bodies, some of them inclined to bud Later there were small mycelial shreds and small round bodies The culture did not ferment lactose, but in glucose fermentation occurred after a week with production of gas

Dr MacLeod had satisfied himself he said, that the organism was not *Oidium albicans* The monilias were able to produce cutaneous lesions which were indistinguishable from those of true ringworm, but the organisms were very different It was likely that many conditions attributed to yeasts were due to monilia

Dr S E DORE demonstrated a case of what he regarded as

Pemphigus Vegetans

A woman, aged 59, had condylomatous growths on both lips, beginning five months before There was no history of any previous formation of vesicles or blebs The lesions developed before any drugs had been taken, but the patient afterwards took potassium iodide and arsenic The Wassermann reaction was negative, and constitutional symptoms were absent As the patient came from a distance he had not had a biopsy done nor scrapings examined

Dr A D HEATH (Birmingham) spoke of a case of his own, looking very similar, which proved to be one of Hallopeau's disease (possibly dermatitis vegetans) There were also lesions of the nails.

post-mortem examination Armstrong was arrested, convicted of murder,[1] and hanged He had been an extensive purchaser of arsenic, ostensibly for weed-killing. A packet containing 2 ounces of arsenic was found in a bureau drawer at his house; a fatal dose wrapped in paper, was found in his pocket on his arrest, and his explanation—that he had made up an ounce of white arsenic into 20 small packets for the purpose of killing dandelions—went far to damage his defence, elicited as it was in reply to a few final questions by Mr. Justice Darling just before the accused man left the witness-box The defence was unable to controvert the evidence of arsenical poisoning, but suggested that Mrs Armstrong had deliberately poisoned herself though the proof of her physical incapacity during the last few days of her life was incompatible with the suggestion A witness for the defence, Dr. F. S. Toogood, presented the theory that Mrs Armstrong had suffered from auto-intoxication when she went into the asylum that arsenic had nothing to do with her then condition, that she took one poisonous dose on Feb 16th and that part of it became encysted—this being the explanation of the delay in the arsenical action upon the parts of the body where it was found at the post-mortem examination. The main legal difficulty in the case was the question whether evidence of the attempt to poison Mr Martin could be given on the charge of poisoning Mrs Armstrong Mr Justice Darling admitted it and the Court of Criminal Appeal upheld his action. The evidence of the attempted poisoning of Mr Martin was not admissible to show that Armstrong was in the habit of poisoning people and might therefore be expected to have poisoned his wife: but it was admissible in order to show that his purchase and possession of arsenic was not for the innocent purpose of destroying weeds (as he had alleged) but for felonious use upon human beings

Mr. Filson Young writes a bright introduction to this trial which is in some respects not of the most notable. He gives hints that other illnesses and sudden deaths in the neighbourhood might have been ascribed to Armstrong's hospitality. The story has not a little medico-legal interest, though in places it is told with a rather exuberant journalism; the inclusion of Appendix B, for example, is hardly justified

CLAIRVOYANCE AND MATERIALISATION

A Record of Experiments by Dr Gustave Geley. Translated by Stanley de Brath, M.Inst C E London: T. Fisher Unwin Ltd. (Ernest Benn, Ltd.) 1927 With 51 illustrations and 105 diagrams. Pp 401. 30s.

In an address before the International Congress of Physiologists at Edinburgh in 1923 Prof Charles Richet entered a plea for the enlargement of the study of physiology by other means than the ordinary channels of the senses, and this work might form a text-book or guide to experimentation in accordance with the lecturer's thesis Anyhow, Dr. Geley's translator describes him as 'Sceptical in analysis tireless in research, scrupulous in statement fearless in pursuit of truth . . .'—qualities which should fit him to scrutinise the experimental research on the supernormal recently undertaken at the International Metaphysical Institute in Paris In an introduction discussing the practical side of mediumship, Dr Geley deals with the conditions necessary to the production of phenomena, admitting the failure of attempts to solve the difficulty of using the senses of touch and sight in the absence of light, and light is said to have an inhibiting effect on the production of 'spirit forms" He believes that this difficulty may be overcome, but until it is, the sceptic must not be blamed if he refuses to accept the happenings in the séance room as scientific phenomena

The book is divided into two parts one dealing with clairvoyance and the other with materialisation—the so-called ectoplasmic appearances—and in both sections the author describes the procedure at séances and the care taken to avoid fraud: he eschews theorising, save where he gives what he holds to be analogous facts in biology as furnishing possible explanations. To describe the experiments is the main task which he sets himself, holding that 'experimental details do, in fact constitute scientific material which must, willingly or unwillingly, engage the attention even of those most prejudiced against metaphysic studies." He admits that he has not been personally fortunate in seeing complete materialisation of actual beings having for the moment all the characters of life, but claims to have seen fingers with nails, hands with bones and joints and a living head, to have felt a skull under thick hair and to have detected living human faces The writing suggests that he believes that he has had these experiences It is suggested in the book that ectoplasmic forms are a physical duplication of the medium materialised during trance, in which case one would expect to find that wax moulds of ectoplasmic hands and feet which are discussed, would be duplicates of the moulds of the hands and feet of the medium, a clear opportunity for trickery thus being provided in the teeth of much protest as to the impossibility of faking. A sequel to the work, in which an explanation of psychic phenomena on philosophic lines was promised, is lost to the world for Dr. Geley was killed in an aeroplane accident in 1924. He was a serious worker along the lines which he chose and real knowledge is, perhaps, not served by refusing to recognise the energy that is being devoted to various forms of psychical research. Yet the sterility that attends the work of the "spiritualists," even more than their romantic conceptions of "science," makes the reading of the procedures at séances unprofitable.

NEUROLOGICAL DIAGNOSIS

Leitfaden der Neurologischen Diagnostik. Second revised and enlarged edition By Dr. Kurt Singer, Nervenarzt, Berlin Berlin and Vienna: Urban and Schwarzenberg. 1926. With 34 illustrations. Pp. 246 M 9

Dr. Kurt Singer's handbook of neurological diagnosis was reviewed by us at the time of its original appearance, and its practical merits emphasised. With commendable brevity the author manages to provide a conspectus of the whole clinical field of neurology without sacrificing essentials His method consists in the selection of outstanding clinical symptoms (muscular atrophy, paralysis, disorders of gait, involuntary movements, neuralgia, headache, vertigo, unconsciousness and so on) just as they are prone to be encountered in practice, and in analysing the significance of their diversified appearances. In addition to symptom examination he takes the student through sign examination—e g., those furnished by the reflexes and by reflex reactions On every page there is evidence of careful clinical observation and of sound knowledge of diagnostic principles and in its enlarged edition the book is sure of increasing appreciation

TRAVAUX ET MÉMOIRES

By Prof. Pierre Marie. Vol I. Paris: Masson et Cie 1926 Pp 358 Fr 30

The veteran Prof. Pierre Marie has been persuaded to reissue in volume form those now somewhat old, and for that reason (among others) classical, contributions of his which in their time either formed entirely new additions to neurological doctrine or served to orient neurological thought into channels subsequently proved to have led to fresh accretions to its sum-total. They are thus of historical interest and value, and they can be re-read to-day with profit if no longer with the fascination inseparable from their first appearance.

Here is the list: aphasia acromegaly, spondylose rhizomelique, chronic hypertrophic pulmonary osteo-arthropathy, hereditary cleidocranial dysostosis, achondroplasia in the adult Time has confirmed the earlier date. Cases are quoted of undoubted aortitis in syphilis which has been under observation from the start, where this lesion is found at the end of the first year of infection or second years. The authors urge that in old-standing cases of syphilis percussion of tendon-reflexes, examination of the pupils, a Bordet-Wassermann test, auscultation of the heart, and a skiagram of the aorta are all equally important. They emphasise the fact that aortitis is found above all in untreated or badly treated cases of syphilis.

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[1] The Lancet 1922, i., 812

There are chapters on blood alterations in late syphilis, on infection by syphilis of the lung, intestine, kidney, peritoneum, pancreas; there is also a chapter on the relation of syphilis to diabetes, and another on syphilis of the endocrine glands. Modest in appearance and price, this book will be of value, not only to the worker in syphilis, but to the general physician. It is a patient and exact piece of medical literature.

DISEASES OF THE SKIN

Third edition. By OLIVER S. ORMSBY, M.D., Professor of Dermatology, Rush Medical College, University of Chicago. Philadelphia: Lea and Febiger. 1927. With 521 figures in text and three coloured plates. Pp. 1262. $11.

THE third edition of this important text-book will be especially welcomed by the English-speaking dermatologist, for it contains an up-to-date bibliography most fairly selected from the best literature of all countries. It is difficult to find any weak spot. The size is handy, the paper and printing of good quality, the text concise yet eminently digestible, and the photographic illustrations of typical cases are of unusual merit. The symptomatology of the various diseases occupies by far the largest share of the available space, but this is not to say that differential diagnosis and pathology are neglected. The author has been wise in referring the reader to original sources for information and detail in the matter of treatment in every case where this is not yet standardised, for much space is thereby saved, and the risk of confusion from too generous a choice minimised. The method of classification is that first introduced by Hebra and since adopted by the majority of the writers of text-books. It is based on pathological effects (visible or microscopic)—e.g., hyperæmias, hæmorrhages, hypertrophies, &c.—and is probably the best until all or most of the ætiological demands can be satisfied. There are three coloured plates, but these might as well have been omitted, for they are not true colour reproductions and do not compare favourably with some of the best modern efforts in this direction.

There is an excellent index of over 30 pages, and no serious student of dermatology need hesitate to purchase the book, but it is to the experienced practitioner that it will make most appeal.

Outlines of Common Skin Ailments. By T. CASPAR GILCHRIST, M.D., Professor of Dermatology, Johns Hopkins University, U.S.A. London: Baillière, Tindall and Cox. 1927. Pp. 54. 7*s*.

THE central purpose of this short publication is to assist the student or the practitioner in consulting larger text-books. The method suggested includes a routine of making three cross-references for any particular case, in the following manner: (1) refer to the scheme for making a complete clinical examination given on p. 6; (2) then turn to pp. 9–11, on the regional distribution of common skin diseases; and finally (3) consult pp. 15–35 for "short diagnostic descriptions arranged according to their primary lesions." A system based on the principle of cross-references is seldom a time-saver, while the information contained in the text is too abbreviated and compressed to be of use to any but lecturers or students preparing for their ordeals. There are some 60 photographs illustrating the commoner diseases of the skin; these are much too small to be of any real value as diagnostic aids.

The idea of the book is praiseworthy and well elaborated, but its employment must not be pressed too far, especially by readers with only an elementary knowledge, for whom presumably the book is designed.

NEW STUDIES OF TUBERCULOSIS AND RESPIRATORY DISEASE

Nouvelles Études Cliniques et Radiologiques sur la Tuberculose et les Maladies de l'Appareil Respiratoire. By ÉMILE SERGENT. Paris: Maloine. 1926. Pp. 537. Fr. 65.

THIS book is a suitable companion volume to the collections of essays published by Prof. Emile Sergent some few years ago, entitled respectively Études Cliniques et Radiologiques sur les Maladies de l'Appareil Respiratoire and Études Cliniques sur la Tuberculose. More than three-fourths of the present volume deals with various aspects of tuberculosis, the remainder being devoted to other respiratory diseases. The former comprises pathological anatomy, the rôle of the soil, adolescence, and syphilis in relation to tuberculosis, with chapters on physical signs and diagnosis, tuberculosis of certain special types such as hilum disease and pleurisy, and treatment and prophylaxis. The latter covers rather sketchily abscess of lung, intrathoracic tumours, asthma, non-tuberculous pleurisies, and the condition of which the author has for many years made a special study, syphilis of the lung.

Like the previous volumes, the book is a collection of essays and is in no sense a systematic text-book. The chapters are made up of collections of papers written by Prof. Sergent to French scientific journals, communications to the Académie de Médicine, and discussions at tuberculosis conferences. For this reason, perhaps, they lack the continuity of an ordinary text-book and are valuable, rather, as the personal views of an indefatigable worker in the domain of tuberculosis and respiratory disease. The views of the author on the frequent and intimate relationship between syphilis and pulmonary fibrosis are well known. The chapter on the use of lipiodol in the radiological diagnosis of respiratory disease is valuable and will be found so to those who wish for a detailed description of the technique and results. The illustrations throughout are beautifully done, as are the coloured plates. It is a pity that the book contains no subject index and that the bibliography is so inadequate.

NOTABLE BRITISH TRIALS

Herbert Rowse Armstrong. Edited by FILSON YOUNG. Edinburgh: Wm. Hodge and Co. 1927. Pp. xi + 396. 10*s*. 6*d*.

IN August, 1920, the wife of Herbert Rowse Armstrong was certified insane and placed in Barnwood Private Asylum, near Gloucester. In the following January she was brought home again, but soon fell ill. In February she suffered from acute and constant nausea; on the 18th she lost the use of her limbs and was unable to get out of bed; on the 22nd she died. In the following October Armstrong, who was a solicitor at Hay in Brecon, where he held the post of clerk to the justices, was engaged in a small controversy with another local solicitor, Mr. Martin, over the completion of a sale. Armstrong frequently pressed Mr. Martin to come to his house for tea. On Oct. 26th Mr. Martin did so and was violently ill that night. A sample of his urine was found to contain arsenic. It subsequently occurred to the doctor, who had also attended the Armstrong household, that Mrs. Armstrong's symptoms—vomiting, the "high steppage" gait, and discoloration of the skin were all characteristic of arsenical poisoning. The Home Office was addressed; Mrs. Armstrong's body was exhumed and was found to contain 3¼ gr. of arsenic, the largest amount which the late Mr. J. Webster, F.I.C., had ever discovered upon a

THE LANCET.

ONDON. *SATURDAY, MAY 28, 1927.*

DRUG STANDARDISATION

last two decades have seen a tremendous e in the quantity and diversity of proprietary Synthetic remedies have multiplied, vaccines ra are sold by private firms on a scale which beginning of the century would have been ered incredible, and during the last few years has appeared a whole new range of gland nces unknown in the catalogues of 20 years

Our remarks refer to products which follow scientific investigations conducted at properly ped laboratories or centres of research, so that eps taken are comprehensible to other workers rapeutic treasury is being thus amassed, the of patient and active research, forming a con- and encouraging reminder of the creative vigour informs medical science to-day The store is added to rapidly and, like every growing thing, s continual watchfulness to keep it within the ds of practical utility Sound guidance is hal to protect the practitioner and the public disappointment or worse, and to unify and then the efforts of investigators and manu- ers for the general good Standards, fixed by best qualified in pharmacology, should serve ouble purpose of eliminating the products of who place their own advantage above that community, and of increasing the value of a product by exactly determining that value and g it to the value of similar preparations

international standardisation of drugs is one departments in which the League of Nations forming effective and unobtrusive work in the ts of public health Two conferences have been held under the Standardisation Com- n of the Hygiene Committee of the League at the strands which the war cut through have e-woven and a foundation has been laid for ng of criteria for some of the most important eutic substances As is fitting, the standards RLICH have been adopted for diphtheria and antitoxin, while on the Copenhagen Institute ed the responsibility for conserving them[1] y is to guard the purity of salvarsan through n of Georg and Speier in Hamburg, and that of small pox vaccine, the test being vented some years ago by GROTH and GINS ndardisation Commission is still working on umococcal and antimeningococcal serum, treptococcal antitoxin, a task to which recent n research on scarlatina has given especial nce Apart from the efforts of the League, ernments of many civilised nations are ng independent inquiries The DIVISION of ology of the Hygienic Laboratory of the U S Public Health Service is giving attention to a group of products for which chemical tests are not commercially practicable with a view to standardising them biologically; the group includes the arsphenamines, insulin, digitalis, and pituitary extract The results for pituitary and arsphenamine have already been adopted by the editors of the United States Pharmacopœia[2]

We summarised in a recent number[3] the new regulations under the Therapeutic Substances Act They form a fairly complete legislative filter for proprietary drugs, but would form a much better one if the necessary knowledge were available Perhaps the time is not yet ripe for subjecting all drugs of whatever kind to a legally established potency and purity test The makers with great names, who have always shown themselves staunch allies of medical science, can be trusted to do everything to perfect their products, and official safeguards would be a negligible stimulus in comparison with their zeal for personal reputation Less scrupulous or skilful manufacturers are bound in the course of time to find their goods in little demand However, in the absence of national or international standards there is no means of relating the potency of a given product from one factory with that of the same product made in another, a handicap alike to manufacturer, clinician, and experimenter. The regulations fix a standard for pituitary extract, but none for ergot or thyroid, not to mention a host of other examples which will readily occur to mind. It is to remedy what is admitted by all to be a dangerous and unsatisfactory state of affairs that the Advisory Council of Scientific and Industrial Research contemplates setting up a joint organisation with the Medical Research Council for undertaking research on the production of drugs and "allied problems," of which standardisation will undoubtedly be one, and for promoting similar research in universities and the chemical industry The grounds for this decision are given in a brief but pregnant passage of the recent report[4] of the Advisory Council "As matters stand now, a private firm or individual may develop a new remedy which preliminary trials indicate may be useful in the treatment of disease, but it is impossible to get such a remedy exhaustively investigated by a competent authority The comparative lack of scientific knowledge of the real action of different chemical substances on the human body also hinders the development of medicine" The project is at present being discussed by a joint committee It is, however, to be hoped that the ultimate scope of the new body, if and when it is materialised, will be much wider than that indicated Chemotherapy is important enough, but unless the field of biotherapy is included as well, the venture will be seriously incomplete Since the action of so many chemical substances can only be ascertained by biological experiments, the apparatus necessary for the latter class of research would be available in any case, and it may be that the Councils have already decided not to confine themselves to the study of pure chemotherapy If this is so, it would be hard to mention a department of study on which public money would be better spent, and the sooner work is started the better Something definite and concrete would then have been done to solve a problem that becomes more urgent every year views expressed many years ago in most instances, if not in all; yet confirmation or modification counts relatively little in comparison with the evidence these pages furnish of the clinical method carried to perfection, of clinical insight tinged with genius, of clinical observation proceeding to its conclusions without waiting on the laboratory or the post-mortem room. Not that either of the latter is ignored or belittled—the exact contrary is the case; but the first step in advancing knowledge must ever be taken by the study of living material and by the correlation of clinical instances. Of this method Prof. Pierre Marie has been the master, as, in another sense, he has been and is still the "Maître" of a whole generation of neurologists scattered the world over.

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[1] ader may refer to a useful summary entitled Die erung von biologischen Produkten, Forschungen u c, April 1st, 1927, p 77

[2] U S Public Health Service Public Health Reports, Feb 11th, 1927, p 394

[3] THE LANCET, April 23rd, p 895

[4] Report of the Committee of the Privy Council for Scientific and Industrial Research for the year 1925–26 Cmd 2782 H.M Stationery Office 3s

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WHEELER'S HANDBOOK OF MEDICINE

Eighth edition. By WILLIAM R. JACK, B.Sc., M.D., F.R.F.P.S.G., Honorary Consulting Physician to the Glasgow Royal Infirmary. Edinburgh: E. and S. Livingstone. 1927. Pp. 630. 12s. 6d.

"Wheeler and Jack" is now well known as one of the best synopses of medicine available as a handbook. It is a stand-by alike to the student and practitioner. The eighth edition has been rendered necessary by the exhaustion of the seventh since we reviewed it in 1924. There have been few changes in medical practice and theory during this interval requiring new articles, but the whole book has been revised to include the most recent work in pathology and treatment. It is the care taken to keep this work up to date that makes it a valuable possession.

NOTES ON MALAYAN CULICIDÆ

By A. T. STANTON, M.D., F.R.C.P., D.P.H. London: John Bale, Sons and Danielsson, Ltd. 1926. Pp. 94.

THIS volume of collected papers by Dr. Stanton, who is a well-recognised authority on the entomology of Malaya, forms one of the series of studies which have recently emanated from the Institute for Medical Research, Kuala Lumpur. Amongst the papers included are several concerning the larval characteristics of Malayan anophelines, notes on the anopheles of Malaya and Sumatra, and records of malaria infections amongst them. The text is embellished, and the descriptions rendered clearer, by the very effective black-and-white drawings of Mr. Engel Terzi and Miss Ruth Ford. The gradual collection of data of the various forms of mosquito that carry parasites in different parts of the tropics is an important part of the world campaign against malaria, and we welcome the efforts being made in Malaya to investigate and differentiate species and their habits.

MEDICAL NOTES

By W. J. TYSON, M.D. Durh., F.R.C.P. Lond., F.R.C.S. Eng. London: H. K. Lewis and Co. 1926. Pp. 64.

THE busy consultant rarely has time to analyse and correlate observations made here and there on all sorts of conditions, and he often hesitates to make public the contents of a scrappy note-book, even if he has been wise enough to keep one. Dr. Tyson, however, has bravely issued a small book containing 50 short notes jotted down at various times. The value of these "stray thoughts, gathered from long hospital and private experiences," is great, for they form records of experience but little influenced by text-books or fashionable views. Notes on such subjects as "syncope from biliousness," "the soporific action of mercury," and "the danger of putting old people to bed" are hardly to be found except in collections such as this. Dr. Tyson makes some useful suggestions on the treatment of the relations and friends of patients; he adds: "I have often thought that the public do not always realise or understand what a professional fee includes. It means not only the direct treatment of the patient, but also the thought for the future welfare of the patient at times when the doctor is at home, and also the interviews, letter-writing, and telephone messages by the relations. It is well sometimes that the public should be informed of these matters." He concludes with an apt note on "when should we as doctors—or our patients—give up work?" Dr. Tyson's book gives one the pleasant impression of having had a chat with him on "shop" by the fireside.

THE STRUCTURE OF THE ATOM

Third edition, revised and enlarged. By E. N. DA C. ANDRADE, D.Sc. Lond., Ph.D. Heidelberg, Fellow of University College, London, and Professor of Physics in the Artillery College, Woolwich. London: G. Bell and Sons, Ltd. 1927. Pp. 750. 30s.

THE third edition of Prof. Andrade's book is a very much bigger volume than the first, and is probably the most complete exposition of the subject at the present time. The book is written for those who want to get definite information on the subject of atomic structure; this information reveals the atom to be of *great simplicity in some respects and in others of* great complexity. The simplicity of structure whereby practically all the mass of an atom is concentrated into its nucleus appeals to anyone who is looking for *an explanation of how it is that alpha particles on* impact with such atoms are sometimes swung back upon their paths, but this simplicity has to be disregarded directly the spectral characteristics of the atoms are discussed; the structure which spectroscopists require in order to give a rational idea of line and band spectra appears to become more and more complex. Experimental and theoretical treatment run side by side in this book, and physicists are under a deep obligation to Prof. Andrade for the masterly way he has tackled both aspects of the subject.

HOMINICULTURE

Organisation et Hygiène Sociales. By Dr. JULES AMAR. Paris: Dunod. 1927. With 110 text figures. Pp. 692.

IT is generally supposed that the time has long gone by when a man could take all human knowledge for his province and write books about it. If it has, Dr. Amar makes a good attempt to revive it. His book is described as a treatise on eugenics or, as he prefers to call it, hominiculture; it might well have been titled *De omnibus rebus et quibusdam aliis*, which is perhaps not an unreasonable synonym for any comprehensive discussion of all that makes for the betterment of the human race. He treats successively of the history of social hygiene, the immense importance of the discoveries of science, the colloidal nature of living matter, immunity, probability and statistics, reproduction and generation, heredity, growth, adolescence and celibacy, education, alcoholism, syphilis, cancer, tuberculosis, old age, death and nationality, with odd notes on everything from Jenner's treatment of his domestic servants to the size of the spleen in sticklebacks. He quotes his authorities profusely and they range from Genesis to Loeb, and from Willard Gibbs to what Lady Astor is reported by the daily press to have said. The whole is written with a captivating vivacity and certainty; the author has clear views on all subjects, and he expresses them plainly. It is impossible to review such a book. It may be felt that no man could cover such a field with anything like tolerable accuracy; as a matter of fact, testing those parts of the book which are within our knowledge, we find that the author does not stray far from what we believe to be the truth. Previous works by Dr. Amar on scientific management, industrial efficiency, and the employment of disabled men have been translated into English and several other languages. This one may be equally popular; it is certainly a remarkable performance and must be almost without rivals for use on a desert island.

harmful. Seeing that conception can be avoided by numerous methods (those in commonest use are abstinence, restriction of intercourse to "safe" periods, coitus interruptus the sheath, the vaginal douche after coitus. various kinds of soluble pessary and sponge or rubber occlusive devices). it is at least possible that these methods may vary in the degree to which they cause harm and though a general survey of the subject designed for the lay public may not lend itself to any detailed discussion of the various methods in use, it is equally obvious that medical men and women must consider the possible effects on health or the production of sterility by each method separately before they can safely generalise. The commonest medical arguments used against birth control are that contraceptives cause sterility, genital disease. and psychoneuroses, and they are useless in preventing conception The degree if any, to which different contraceptives offend in these ways is capable of statistical formulation. Certain material for statistical treatment of the subject already exists Through the Walworth centre of the Society for the Provision of Birth Control Clinics over 8000 women have passed.[1] Through Mrs. Marie Stopes s centre at Holloway 5000 patients had passed at the beginning of 1925,[2] and in the near future doubtless further material will be available No statistical records are discussed in the essays

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[1] Annual Report 1925–26 Wardale Press

[2] "The First Five Thousand" 1925 Bale and Danielsson

THE DISINFECTION OF BEDDING

BEDDING and blankets are particularly difficult to disinfect by heat And this is natural, for as HAMER and HUTT point out,[1] they represent the highest outcome of man s ingenuity in devising material to check the passage of heat Bedding does not suffer to the same extent as do blankets from prolonged exposure to heat, and there is a growing tendency to be content, in the case of bedding, with thorough sunning and airing Brighton, for instance, gave up stoving mattresses 15 years ago without any increase in the number of return cases of the common exanthemata But Margate disinfected more than 600 blankets last year, and blankets no doubt formed a considerable proportion of the 50,000 articles which went through the municipal disinfector at Newcastle-on-Tyne It may be well, therefore, to recall certain experiments on chemical disinfection made by Dr H OSBORNE, medical officer of health of Salford, to which brief reference [2] has already been made The outcome of one set of these experiments was that at blood temperature the disinfecting action of carbolic acid is twice as powerful as at ordinary room temperature and three times as powerful as at freezing-point Dr OSBORNE started from the position that blankets in particular are liable to be greatly deteriorated by exposure to a temperature of 115°–120° in the steam disinfector, although they will suffer less damage when saturated steam is used and the articles are not exposed to great heat in the subsequent drying Many years ago the late Prof SHERIDAN DELÉPINE showed, for the benefit of the Bradford wool industry, that even anthrax spores may be killed by exposure to warmed formaldehyde vapour, and the Salford Health Committee has recently installed an apparatus at Ladywell Sanatorium for disinfecting blankets and woollen articles by the warm formalin vapour process If the desired result can be obtained in this manner there seems no reason why the practice should not be more generally adopted, for one type of disinfector at least can readily be converted into a formaldehyde chamber

It was DELÉPINE also who showed the great increase of efficacy brought about by warming the disinfectant solution The experiments were carried out by Dr OSBORNE under DELÉPINE's direction, and the results appear for the first time in his report A fixed time of exposure to the disinfectant was adopted as convenient—viz, 20 minutes—and the organisms used in the tests were the colon and plague bacilli, the golden staphylococcus, and anthrax spores Both broth cultures and silk threads, soaked in an emulsion of the organism, were tested against carbolic acid With the three non sporing organisms disinfecting power increased proportionately with the heat For example, threads impregnated with the colon bacillus were rendered sterile by 1 40 and 1 50 solutions at freezing-point, by 1 60 and 1 65 solutions at 13° C, and by 1 20 and 1 130 solutions at 36° C Of the three the plague bacillus was the most easily killed At blood heat the colon bacillus and the staphylococcus succumbed in solutions weaker than 1 100 and the plague bacillus in solutions of 1 500 Anthrax spores proved vastly more resistant Thus a 1 50 solution of carbolic took 10 to 14 days to kill these spores at 37° C and four days at 47° C, while a 1 20 solution took 12 to 18 hours at 37° C and three to four hours at 47° C, even liquefied carbolic acid failed to kill in nine days at 18° C, but required only two hours at 37° C and 10 to 20 minutes at 47° C The practical outcome of these experiments is that a comparatively weak solution of carbolic such as 1 100 may be depended upon to kill at blood heat all the non sporing organisms for which disinfection is usually needed In the rare cases where disinfection for anthrax is needed a much stronger solution and a longer exposure will be necessary, or recourse may be had to the warm formalin chamber Now that these results obtained by Prof DELÉPINE and Dr OSBORNE have been published the matter will no doubt be followed up by other investigators using a variety of disinfectants Such a sequel seems eminently desirable

Modern practice tends to belittle the good done by ordinary attempts at fumigation and disinfection of the air of rooms, and to concentrate on the removal of bedding, hangings, and the like, to the public disinfecting station It is therefore the more important that the householder should have confidence that the goods removed will be returned to him intact There is at present a very natural but dangerous tendency to conceal any valued articles of clothing or bedding in order to save them from possible damage We believe that inquiry would show that there is as much room for improvement in methods of disinfection by public authorities as there was found to be in the methods and apparatus used not long ago for the commercial pasteurisation of milk

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THE MEDICAL ASPECTS OF BIRTH CONTROL

BIRTH control differs from the great majority of questions upon which the medical profession can claim first voice in that, for most people whether lay or medical, it is intimately bound up with ethical and religious convictions For those persons whose religious beliefs with regard to birth control are fluid, disinterested scientific inquiry with regard to the merits and demerits of the various devices which are employed to avert pregnancy is possible, though it may not always be easy But for those whose intimate beliefs are guided by religious precepts which are uncompromisingly hostile to birth control, a disinterested spirit of inquiry becomes a matter of difficulty, almost amounting to impossibility

It is a peculiarity of human psychology that when a given practice is believed to be morally reprehensible, this practice cannot easily be regarded as, in any sense, generally expedient It is rare to find a person opposing birth control on religious grounds who does not oppose it on all other grounds of expediency as well For these reasons the formulation of an impartial opinion on the purely medical aspect of this question is difficult The author of the critical review of a recent medical compendium of this subject, which we publish on another page, finds unconscious bias in the essays of some of the contributors By most of the writers in the book, which has been hailed *in certain quarters* as a weighty medical condemnation of all forms of birth control, it is conceded that the practice of artificial conception control is justified in cases where the woman is unfit for pregnancy, or tainted with hereditary disease, though this practice is opposed when the woman is merely suffering from economic stress But with regard, in either contingency, to the best method to be employed to avert conception this book is silent, though the majority of the writers are emphatic that the use of contraceptives is frequently harmful Seeing that conception can be avoided by numerous methods (those in commonest use are abstinence, restriction of intercourse to ' safe ' periods, coitus interruptus the sheath, the vaginal douche after coitus various kinds of soluble pessary and sponge or rubber occlusive devices), it is at least possible that these methods may vary in the degree to which they cause harm and though a general survey of the subject designed for the lay public may not lend itself to any detailed discussion of the various methods in use, it is equally obvious that medical men and women must consider the possible effects on health or the production of sterility by each method separately before they can safely generalise The commonest medical arguments used against birth control are that contraceptives cause sterility, genital disease and psychoneuroses and they are useless in preventing conception The degree, if any, to which different contraceptives offend in these ways is capable of statistical formulation. Certain material for statistical treatment of the subject already exists Through the Walworth centre of the Society for the Provision of Birth Control Clinics over 8000 women have passed.[1] Through Mrs. Marie Stopes's centre at Holloway 5000 patients had passed at the beginning of 1925,[2] and in the near future doubtless further material will be available. No statistical records are discussed in the essays

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[1] A Manual of Hygiene Methuen and Co 1925, p 544

[2] THE LANCET, 1926, ii, 1240

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[1] Annual Report 1925–26 Wardale Press

[2] "The First Five Thousand 1925 Bale and Danielsson

Annotations.

"Ne quid nimis"

ODONTOLOGICAL COLLECTION AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

ON Monday last the President of the College opened the new odontological collection in the Hunterian Museum, a magnificent collection and a great testimony to the devotion of the Odontological Section of the Royal Society of Medicine, and especially to Sir Frank Colyer. In a brief address Sir Berkeley Moynihan sketched the steps which had led to the formation of the collection. This, he said, dates back for 70 years when the leading dental surgeons of the country formed the Odontological Society of Great Britain and began at once to collect instructive specimens for exhibition at their meetings. As a result, when the Odontological Society came to be fused with the Royal Society of Medicine, no less than 5000 catalogued specimens were in charge of an indefatigable honorary curator; this was Sir Frank Colyer, who remains to-day in that position, "displaying," as the President said, "all the energy and enthusiasm and even more than the high competence of 20 years ago." It was recognised by all that this great collection could be regarded as of a national character while serving the particular interests of odontology, and accordingly, in 1908, the Royal Society of Medicine offered the collection in trust to the College, who one year later installed the specimens in their museum and defrayed the accompanying cost. Thus, as Sir Berkeley Moynihan reminded his hearers, to the specimens assembled by the Odontological Society there could be added the Tomes collection and John Hunter's original specimens, described by the speaker as "things of the utmost beauty of workmanship and beyond all price both from their scientific and their historical interest." For all comparative pathologists know that some of Hunter's most fundamental discoveries were the outcome of his study of teeth. The College acceded to the natural representations of the Odontological Section of the Royal Society of Medicine, the heirs of the old Odontological Society, that the Section should continue to take a direct interest in the welfare and growth of the collection, use its contents for their meetings and demonstrations, and advise in its general management, a part of the trust now faithfully carried out by Sir Frank Colyer and zealous colleagues. So that the number of the specimens has grown with amazing rapidity especially in the direction of the comparative pathology of the teeth—an important branch of knowledge which the curator has made peculiarly his own, utilising to the full the splendid material placed at his disposal by the Zoological Society. The President closed his address by referring to the recent addition to the odontological museum of the Howard Mummery bequest, the microscopes, instruments, and the material results of all that great investigator's labours being now ranged alongside of the Tomes collections.

MILK AND VITAMIN D

RECENT experimental work in this country makes it probable that the parent substance of vitamin D, the antirachitic factor, is either ergosterol or a highly unsaturated sterol of similar constitution, which becomes active after it has absorbed ultra-violet light and lost its characteristic absorption band. The antirachitic value of milk varies, as everyone knows, within wide limits, and that of cow's milk—fresh, dried, or condensed—can be greatly increased by exposure to ultra-violet light. Presumably any ordinary cow's milk contains an amount of ergosterol which would be ample to render the milk strongly antirachitic if the sterol were present in the activated form. Now the age at which rickets begins to develop in children is nearly always well under one year, though it may progress if conditions are adverse until the child is several years old. Hence the importance attaching to attempts, such as those described in THE LANCET of April 30th, to raise the antirachitic value of winter cow's milk, the staple foodstuff of nearly all artificially fed infants. An experiment corresponding to that of Dr. J. Golding, Miss K. M. Soames, and Dr. S. S. Zilva has been carried out by Dr. A. A. Weech[1] in Baltimore, human mothers and their infants being the test-objects instead of cows and rats. Dr. Weech made his observations on negro mothers and their breast-fed babies, delivered in the Johns Hopkins Hospital, and attending welfare centres in the city. The prevalence of rickets in breast-fed coloured babies in the United States makes its prevention a very urgent problem. In a series of 260 mothers he endeavoured to get three out of every four to take approximately half an ounce of cod-liver oil daily from the time of confinement onwards, but only 47 of the series of infants were, from one cause or another, available for study when the baby was about six months old in January to May, 1925. Many infants, for example, had been given accessory feeds and were therefore excluded. One point of interest is that, in spite of great efforts on the part of the observers, only 12 of these mothers had received (and presumably consumed) as much as 40 oz. of cod-liver oil in six months, which means a daily average of 2½ drachms or (say) one and a half level teaspoonfuls. This emphasises the fact that cod-liver oil so given is unlikely to be generally used by nursing mothers, though possibly if smaller amounts had been ordered it would have been better taken. A similar attempt at prophylaxis by administering cod-liver oil to the mothers was made by the British and Austrian investigators in Vienna in 1920–1922, but was abandoned on account of the dislike to the oil shown by the mothers. However, Dr. Weech produces radiographic and clinical evidence that the quantities of oil taken in his experiment had a prophylactic value—that is to say, a certain amount of the antirachitic vitamin passed into the milk—though even the larger amounts of oil (48 and 58 oz. in six months) did not ensure freedom from rickets in the child. No indication is given as to whether this medication was fairly evenly distributed over the period of observation. Infants known to have had cod-liver oil directly administered were of course excluded, though the possibility that others of the series *may* have received some cannot be entirely ignored. The radiographic and blood findings—calcium and phosphorus in the serum—show a remarkably close parallel, and both indicate that the average degree of rickets in the children varied inversely with the amount of cod-liver oil taken by the mothers. Three years ago Dr. R. Wagner and Dr. H. Wimberger[2] in Vienna fed rachitic in-patient infants on the milk of cows receiving cod-liver oil in doses increasing from 50 to 300 g. daily during the winter. These children received, it is true, a diet high in carbohydrate; the milk, however, did not prove definitely curative, and it is clear that much more work is necessary before final conclusions can be formulated.

INCREASE OF SYPHILIS IN FRANCE

SOME months ago[3] Prof. Josef Jadassohn, of Breslau, addressed a questionnaire to syphilologists in various countries, and the results indicated that except in France, there was a general decline of syphilis throughout Europe. Similar conclusions have been reached by Dr. Marcel Petit.[4] Both in Paris and in the provinces, he finds, there has been a distinct increase in the incidence of syphilis since 1924 in striking contrast with its decline in other countries. In Scandinavian countries, for instance, the disease is said to have disappeared almost completely. In Switzerland its rapid and continuous decline is shown by the number of primary chancres in Prof. Oltramare s clinic at Geneva having fallen from 104 in 1919 to 2 in 1925 In Belgium likewise there has been a decrease ; in the province of Antwerp, for example the number of primary sores which was 203 in 1920. fell to 10 in the first eight months of 1925 and to nil in the September of the same year. A similar decline was also shown in Spanish statistics This decrease of syphilis is attributed by the syphilologists of the countries in question partly to the fact that State regulation of prostitution has been abolished and partly to the good effects of treatment with salvarsan The persistence of the disease in France appears to be due to two principal groups of causes The first includes factors which have long been in existence—namely, ignorance on the part of the patient and ignorance on the part of medical practitioners. The second group comprises those causes which have come into operation only within recent years—e g the immigration of infected workmen from abroad especially Arabs and Poles the increase of prostitution due to economic conditions and the abandonment of intravenous injections through fear of accidents Dr. Petit urges the taking of energetic measures to stem this rising flood of syphilis

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[1] Bulletin Johns Hopkins Hospital, April, 1927.

[2] Zeitsch. f. Kinderhk., 1926, xl., 295.

[3] THE LANCET, 1926, ii., 1125.

[4] Thèse de Paris, 1920, No. 501.

OSTEOPATHS AND THE MEDICAL ACT.

THE vexed question of an osteopath's right to recover fees in the law courts seems to require answer by some tribunal of high authority. A few weeks ago the deputy county court judge sitting at Marylebone entered judgment for the defendant in an action in which an osteopath had claimed £30 9s for fees for treating the defendant s wife for nervous disability and facial neuralgia This decision was based on the familiar language of Section 32 of the Medical Act of 1858, which debars the recovery in a court of law of any charge ' for any medical or surgical advice, attendance or for the performance of any operation ' unless the plaintiff proves at the trial that he is registered under the Act The plaintiff at the Marylebone court had no British medical degree, but had an American degree as doctor of osteopathy. He appealed to the Divisional Court on the ground that he had claimed fees for manual treatment, not for advice given ; he said the defendant s wife, when she first visited him, knew perfectly well the nature of osteopathic treatment His counsel submitted that the circumstances were almost exactly similar to those of an earlier case (Hall v. Trotter) in which it was held that an osteopath could recover fees for treatment rendered The Divisional Court felt itself bound by the authority of Hall v. Trotter (decided in 1921) and sent the case back to the Marylebone County Court for a new trial.

The *facts in Hall v* Trotter are, unfortunately, not very fully reported. It is important to know whether the facts amounted to ' advice " or "attendance ' or "the performance of an operation" within the meaning of Section 32 An osteopath sues on an implied contract to pay him a reasonable sum for the skilled services he renders Presumably the court must satisfy itself of the substantial nature of those services and must not merely accept the description which the osteopath gives to them. It may be, as Mr Justice Acton observed in the recent case, that an osteopath's charges can on analysis be split up into items for advice and items for manual treatment, and that fees can be recovered for the latter and not for the former Presumably the defendant takes the view that his wife went to the osteopath for advice and to obtain such treatment as he might advise It may be that the osteopath replies : "I gave no advice, *or, if I did* I made no charge for it " But even then we are in doubt as to the meaning of "attendance " Is it attending upon a patient *or attending* to a patient ? And is not manipulative treatment (which sometimes involves the breaking down of adhesions or the readjustment of something displaced) an " operation, or can no operation be performed without a knife ? Judges are not likely to construe the word "operation ' in such a manner as to prevent a masseur from recovering his charges And in Hennan v Duckworth in 1904 Mr Justice Wills interpreted the word ' operation " in the corresponding section of the Dentists Act as meaning an operation " in the surgical sense ' going on to decide that an unregistered practitioner might recover a charge for supplying false teeth but not for fitting or filling In Hall v Trotter Mr Justice Horridge breezily declined to be led into definitions He said that the plaintiff (a woman) gave no advice but merely gave certain treatment to the body Mr Justice Shearman, who agreed said she used her knowledge of anatomy to help her to determine the part of the body to which she should apply the treatment she had been specifically called in to give But he added that he was far from saying that anyone who liked to call himself an osteopath could charge for any service which he chose to render. In concurring with Mr. Justice Acton in ordering a new trial in the recent appeal, Mr. Justice Talbot observed that had it not been for the decision in Hall v. Trotter, a very strong argument might have been urged in support of the Marylebone County Court judge's judgment It is to be hoped, therefore, that the Marylebone case will be brought before the highest legal tribunal, so that the legal uncertainty may be removed

SWIMMING BATHS

IT is now 15 years since Dr Graham Forbes called attention *to the dangers of the public swimming bath* in a paper published in *School Hygiene* (1912). Since then much has been written on the subject, especially in America, and at a meeting of the Society of Medical Officers of Schools *on* May 20th Dr Forbes was able to refer to a formidable list of papers recording various infections, minor and major, traced to the public bath He quoted the results of a *questionnaire* addressed to 2000 American doctors in 41 States. 70 per cent of the replies expressed a belief in the positive danger of the bath ; 38 per cent ascribed this mainly to the water and 31 per cent. mainly to the towels and bathing suits Several *definite* and authenticated epidemics were reported—7 of conjunctivitis 9 of diseases of the skin, 2 of otitis media, 2 of tonsillitis, and 1 of sinus infection. Colds and catarrhs were also recorded in large numbers; ringworm typhoid fever, venereal disease, and even poliomyelitis were attributed in *some* cases to public baths. Bacteriological counts had found 4000 bacteria per c cm. of bath water, derived from the skin and saliva of the bathers and from fæcal contamination Although *most* of these organisms are normally saprophytic they are, as Dr. Forbes pointed out, capable of becoming pathogenic under certain circumstances of lowered bodily resistance, particularly the chill following long immersion. In most children the clinical thermometer gives a lower reading after bathing The local effect of chilling the nasal and pharyngeal mucosa must also be considered, as well as the absence in man of the anatomical adaptation to immersion which characterises aquatic mammals and birds The rapid increase in bathers, and the recognition of the dangers involved, have made public authorities consider their legal liability in the event of an infection being traced to their baths In America a very high standard has been set up by the American Public Health Association , bathers are made to take a preliminary wash with soap, and a two-way vertical shower plays down on the head and up between the legs ; they are warned to avoid expectoration and blowing water out of the mouth. Such an interference with personal liberty would never, Dr Forbes feared, be countenanced in this country, although in London baths the attendants are supposed to refuse admission to very dirty children In one only are bathers required to wash themselves first The untreated swimming bath is a shocking sight, as Dr. F W.

Alexander vividly recalled at the same meeting. The water soon becomes like pea-soup, the smell of clothes and towels is overpowering, and on the bottom a slimy mass of hair and dirt collects. Dr. Alexander described the difficulties and successes of his pioneer work on the public baths of Poplar, where the first electrolytic apparatus was installed in 1908. Hypochlorite of magnesium is used there with great success[1] in the proportion of one part of chlorine to one or two million parts of water. The plant consists of five Mather and Platt 30-amp graphode electrolysers, each with eight cells working in series off the council's supply. The total output of the plant is about 300 gallons a day at a cost of approximately 1s 6d per gallon of liquor containing 10 g of available chlorine per litre. Bath water treated with this "electrolytic fluid" keeps clear longer, and is said to be fresher and more invigorating. As Dr. Alexander pointed out, such a method must have as its object the improvement of the water, and not economy in changing. The rule now is that fresh water is supplied after every 1000 bathers, but the matter is not entirely one for rule of thumb, as very often in hot weather the water will suddenly become opaque and dirty; the time of changing must depend on temperature, aeration, and other factors. The reason for this sudden turbidity is obscure. Dr. Alexander ascribes it to an increase in bacteria and organic matter. Electrolytic fluid will not clear it up again.

While chlorination of some sort is a useful practical method, it is generally agreed that the ideal treatment is filtration, aeration, and sterilisation, as carried out in the open-air bath at Harrow, described by several speakers as almost ideal. To keep the water not only bacteriologically pure but also clear, colourless, and attractive means such constant changing of the water that the baths could only be in use for half the time. Many big baths take two or three days to empty, clean, and refill, as Mr. E. C. Wilkinson pointed out in describing the best plants for a continuous system of purification. In the first place, the baths should be so built that they can be easily cleaned, and secondly, they should be lined with white glazed brick or cement, and fitted with a patent non-slip curb and an overflow trough to serve as spittoon and scum-collector, with a spray pipe to drive the scum to one end. The cost of upkeep should be reduced by having as little woodwork and painting as possible. The purification plant should include a battery of two or more filters with an aeration chamber, and a pump with an air compressor. The water is taken through a strainer, and at the same time the chemical reagent is drawn in and mixed with it. It then passes to the filter and thence to the aeration chamber, and finally through a heater. Thus it is continually purified and passed round into the bath again every six, eight, or ten hours as desired. If there are two filters, one can be cleaned while the other is still filtering by a reverse flow of the water—a very important point, since filters soon get out of order if not cleaned regularly. To keep the water bacteriologically safe Mr. Wilkinson recommended the addition of chlorine in some form to the bath at night, while it should also be aerated by the cascade method or by blowing air into it. With such an apparatus it is possible to go on using the same water for a few years, although Mr. Wilkinson thought it wiser to change the water once every 12 months. In his opinion the plant should pay for itself in three or four years, quite apart from the inestimable benefit to the public health. The cost of an apparatus to deal with a bath of 370,000 gallons, passing the whole of the water through in eight and a half hours, would lie between £3000 and £4000 with about £40 per annum for maintenance. To turn out and refill such a bath would take three days each time and cost £230 in the course of a year, so that the outlay on the filtration plant would soon be paid back, apart from the ability of the properly-equipped bath to accommodate extra bathers. Harrow had had an increase of over 25 per cent. of visitors after the plant was installed. To these safeguards of construction Mr. Wilkinson added those of regular bacteriological inspection, the proper washing and disinfection of towels and suits, and hygienic education of all bathers. Instructors should give lectures from time to time on the use of the bath, showers, and the preliminary wash. There should be a suction-sweeper for the bottom of the bath.

However ideal such an installation may be, its practicability for all swimming baths may arouse discussion. Dr. L. R. Lempriѐre held that for public schools the cost would be prohibitive, whereas Dr. E. H. Nash maintained that expenditure so closely involving the health of children ought not to be called in question by school authorities. If purchased outside, the electrolytic fluid would cost perhaps £20 for the season for a school bath of 250,000 gallons, whilst even cheaper is nightly sprinkling of the surface with chloros fluid. Changing the water in such a bath costs £7 and takes three days each time out of the short swimming season. Copper sulphate and ultra-violet rays as disinfectants are not satisfactory, according to Dr. Forbes, and the merits of any simple form of disinfection have to be weighed against those of more complicated and expensive plants. It is certainly time that public school authorities followed public bodies in considering carefully the evidence for and against the dangers of untreated swimming baths.

TROPICAL DISEASES IN THE LIGHT OF HISTORY

THE current number of the *Tropical Diseases Bulletin* contains a section dealing with the historical aspects of tropical diseases. Records have been consulted from British, Portuguese, Dutch, French, American, Italian, and German sources, and a vast amount of varied and interesting information is presented, including descriptions of disease by the early Portuguese navigators and colonists, and the earliest notices of plague, malaria, leprosy, and scurvy. In a paper on the Portuguese of the Renaissance, read at Coimbra in 1925, Carlos França clearly showed that the missionaries and explorers of the fifteenth and sixteenth centuries were not concerned alone with souls and commerce, but had an astonishing flair for recognising diseased conditions and for describing them. Thus João dos Santos, a Dominican missionary, who visited East Africa in 1586, has left us a description of night-blindness, a complaint regarded as peculiar to Mozambique, Duarte Lopes noted the guinea-worm, while other observers describe the chigger flea, various myiases, cholera, snake poisoning, syphilis, and yaws. Other papers referred to in the *Bulletin* which will repay reading in the original are by Colonel W. P. MacArthur, "Old-Time Plague in Britain," by Prof. Ichok, "La peste dans le passe et a notre epoque," and by F. E. C. Coudray, "La peste a l'armee d'Orient de la 1re Republique." This excursion into tropical history leads us to hope that some learned member of the Bureau will look into the list of poisonous snakes and other animals of the Libyan deserts as given by Lucan in Book IX. of the Pharsalia (ll. 519 et seq.) where the effects of their bites are discussed with a vivid wealth of singularly unpleasant detail. Light might also be thrown upon the vexed question as to whether the Salpuga or Solfuga was a scorpion or a spider. We hope that this innovation will develop into a permanent feature of the *Bulletin*.

THE CENTENARY OF THE DISCOVERY OF BRIGHT'S DISEASE

A LUNCHEON will be held in the Governors' Court Room of Guy's Hospital on Friday, July 8th, to celebrate the centenary of the discovery of Bright's disease by Dr. Richard Bright, who was physician to Guy's Hospital from 1820 to 1843. The Earl of Balfour will be present, and subsequent to the lunch the Bright Memorial Oration will be delivered by Dr. W. S. Thayer, Emeritus Professor of Medicine, Johns Hopkins University, Baltimore.

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[1] THE LANCET, 1926, i, 357.

It may be recalled that in THE LANCET of Oct 10th, 1925, Sir William Hale-White, in an interesting summary of Bright's life and work, gave the date from which the centenary should be counted as Oct 12th 1825, and the discrepancy may seem to require explanation, though it is contained in Sir William Hale-White's words He is dating the centenary from the commencement of Bright's investigations which were definitely started by an observation of the symptoms manifested in an intemperate sailor admitted into Guy's on Oct 12th, 1825 It was of this case that Bright said, after noting the "kidneys granulated throughout," the large heart, and the ascites, that in his opinion "the disease of the kidneys was the first established" His renowned "Reports of Medical Cases selected with a view of Illustrating the Symptoms and Cure of Diseases by a reference to Morbid Anatomy" appeared in two volumes, the first in 1827 the second in 1830, so that 1825 was the year when Bright began the study of the syndrome for ever associated with his name, and 1827, the year when his splendid observations, transformed from theory into fact, were ready for general publication

DENTAL BOARD PROBLEMS

IN his address from the chair at the opening of the twelfth session of the Dental Board of the United Kingdom Sir Francis Acland noted with satisfaction how few were the allegations of offence against a profession which had more than 14,000 names on its register What had, however, been giving the Board serious thought was the question of dental clinics in relation to advertising and canvassing A firm or organisation with a genuine desire to benefit its staff or members, and without any financial interest in the arrangement, may provide a dentist with a consulting-room or a surgery, on or off their premises, and may, or may not also pay him a fee. His work for them may be part-time only, but attendance upon their staff will give him an introduction to practice with the families and friends of those who come as patients The firm or organisation may call the attention of their staff or members to the fact that those who need attention to their teeth can attend, or are advised to attend, their clinic. giving the name of the dentist in attendance There can be no doubt, said Sir Francis Acland that this sort of thing is not at all popular in the profession It is for the fortunate individual a short cut to practice which is regarded as unfair to others who have no chance of being provided with patients ready-made But the question which the Board may have to decide does not turn on popularity, it is whether the dentist concerned has been guilty of "infamous or disgraceful conduct in a professional respect," or. to use the exact words of the notice on advertising and canvassing has adopted a practice "contrary to the public interest and discreditable to the profession of dentistry" It may be assumed (quoting from this notice) that he has not "acquiesced in the publication of any notice directing attention to his professional skill knowledge service or qualifications, or depreciating those of others," for the announcement of the clinic contains no such element Has he then adopted the practice "of advertising, whether directly or indirectly. for the purpose of obtaining patients or promoting his own professional advantage"? He has not done so directly The question is, "Has he advertised indirectly?" Having brought the question so far Sir Francis Acland said that it could only be rightly answered on a particular case and in view of the circumstances of it Another class of case that in which an approved society under the Health Insurance Acts says to a member who is entitled to treatment under their scheme "This is our dentist or these few persons are our dentists you must go to him, or to one of them if you require treatment" involves denial of free choice If a dentist knew that this practice was being adopted in connexion with him and permitted it he would be liable therefore to disciplinary action by the Dental Board

Turning to the financial assistance of likely pupils for the dental profession Sir Francis Acland corrected a mistake made by Colonel Wedgwood when speaking in Parliament on a Bill for the registration of architects He then said that since dentistry had been made a closed profession it had been made impossible to anyone to qualify unless he was able to lay out £1000 on the training "No misconception," he said 'could be greater The fold may be closed except through the proper entrance, but in no profession is the entrance so wide open for those who seem likely to be able to take advantage of the training, regardless of their means This fact ought to be widely known, and we shall have to consider means of making it even better known than it is to head masters of schools and others, who are likely to be in contact with those who may, with the assistance of our bursaries become well-qualified practitioners" The Educational Grants Committee in their report to the Board stated that of the 75 candidates for bursaries during the last 12 months 60 were accepted Deans of dental schools find that the Board's bursars compare favourably with the ordinary student in regard to all essential respects One dean remarks that he is tempted to think it might be an advantage if all students came in in the same way Of the 207 students who so far have been awarded bursaries, 40 (38 men and 2 women) have qualified

ANTENATAL TEACHING IN THE MEDICAL SCHOOLS

THE importance of directing the attention of medical students throughout their hospital career to the preventive aspects of medicine is emphasised by the General Medical Council in an additional resolution to the instructions issued with regard to professional education in medicine The Maternity and Child Welfare Group of the Society of Medical Officers of Health is alive to the need for exciting interest among students in the welfare of prospective mothers and infants, and has sought to ascertain by means of a questionnaire addressed to medical schools and qualifying bodies what steps are being taken to comply with the ruling of the General Medical Council that students must obtain instruction and pass an examination in antenatal conditions and infant hygiene From replies received the gratifying conclusion is drawn that the majority of the schools are fully alive to the value and importance of these branches of preventive teaching and have made arrangements for instruction of students in advance of the requirements imposed on them for examination The Maternity and Child Welfare Group note, however that the term 'infant hygiene" as used by the G M C is subject to a variety of interpretations. and desire to state that, in their opinion. infant hygiene should include the study of the normal child up to the age of 5 years The replies from the medical schools imply that for the most part the term is understood to mean the hygiene of the child beyond the age of 1 month and that the student may thus receive minimal instruction if any, in the management of the child beyond puerperium The existing arrangements in some schools for the clinical initiation of students into these particular subjects seem to the inquirers to be defective For the interest and information of those universities which have not yet made specific arrangements for clinical instruction of students in antenatal conditions and infant hygiene the Committee have set out in full two comprehensive schemes which are already in operation at St Thomas's Hospital and the London (R F H) School of Medicine for Women respectively The scheme at St Thomas's Hospital was set out recently by Dr John Fairbairn in an address to the Glasgow Obstetrical Society and is evidently one which could be adopted with advantage elsewhere The clinical teaching of obstetrics gynæcology, and pædiatrics extends over a period of six consecutive months

The first month is devoted to the study of the pregnant woman in the antenatal clinic and to the infant welfare clinics, the student thus obtains a view of the whole system of prevention early in his term For a month he is drilled in the maternity ward (600 deliveries per annum), and then for a month goes out in the district The next two months of his term are devoted to the study of the diseases of women in out-patient and in-patient departments, where the results of the injuries and infections of child-bed are seen In his final two months he returns to the infant welfare clinics, and attends both out- and in-patient departments for the diseases of children, where again he sees the effects of failure of prevention, and continues his gynæcological practice by attendance on two afternoons a week in the out-patient department for diseases of women Each hospital and medical school has its own special difficulties to overcome in cramming the curriculum into five or six brief years, but the scheme outlined appears to succeed in securing a more logical sequence of teaching than many of us were privileged to secure It may be that in the future the student will be enabled to view his course in a better perspective in all its branches For the more haphazard system or lack of system in the past it can only be said that the sorting out and rearranging of miscellaneous and apparently unconnected facts was a valuable foretaste of the conditions in which medical practice would have to be carried on by the student when qualified

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The Royal Institute of Public Health is holding its annual congress at Ghent from Wednesday, June 1st, to Monday, the 6th The President will be Lord Burnham, and there will be five sections, devoted to State Medicine and Municipal Hygiene, Naval, Military, Air and Tropical Diseases, Industrial Hygiene, Pathology, Bacteriology and Biochemistry, and Women and the Public Health They will meet under the presidency, respectively, of Sir Alfred Mond, Air Vice-Marshal D Munro, Lord Leverhulme, Sir Berkeley Moynihan, and Lady Burnham The inaugural meeting, at 10 30 A M on Wednesday, is to be held in the Palais des Fêtes, when the King of the Belgians, accompanied by the Queen, will open the proceedings A reception at the Hotel de Ville is arranged for the same day, whilst other functions include a reception at the University, when honorary degrees will be conferred, a banquet, and a gala performance at the Royal French Theatre The Governor of Eastern Flanders will receive members of the congress at the Château de Beirvelde on Sunday afternoon, and in the morning Mass will be celebrated at the Cathedral of St Bavon The following day will be devoted to excursions in the neighbourhood

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Next week 120 members of the Inter-State Post-Graduate Assembly of North America are to visit London and a series of lectures will be delivered on the mornings of June 1st, 2nd, and 3rd at Dartmouth House, the headquarters of the English-speaking Union, 37, Charles-street, W 1 The sessions will be opened at 10 15 A M on June 1st by Lord Reading and Lord Dawson of Penn In the afternoons a number of London hospitals have arranged to receive the guests, and on Thursday, June 2nd, at 5 30 P M, Sir Arthur Keith, F R S, will give a demonstration at the Royal College of Surgeons On the following day at 8 30 P M Sir James Berry (the President) and Lady Berry will receive members of the Assembly and ladies at the Royal Society of Medicine, where Dr G W C Kaye, of the National Physical Laboratory, will speak on X Rays and some of their Uses Lady Swaythling and other members of the English-speaking Union are to give a reception to the ladies at Dartmouth House on June 2nd, from 4 to 6 P M

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

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CCXXV.

THE TREATMENT OF INSECT BITES AND STINGS

Insect venoms may have one or several of the following effects (*a*) hæmolytic, (*b*) neurotoxic, (*c*) irritant—producing local inflammation, (*d*) producing profound and even fatal shock

Mosquitoes, Midges, and Flies

The nature and source of the poison introduced by a mosquito or gnat has been for long supposed to be the secretion of the salivary glands, but Nuttall and Shipley in 1903 and Schaudinn in 1904 showed that the evidence for this is far from conclusive. Nuttall and Shipley could find no evidence of hæmolysis or delayed coagulation produced by an emulsion of the salivary glands of *Culex pipiens* Schaudinn found that the irritation of a mosquito bite was due, not to the saliva, but to an enzyme contained in a commensal yeast which is a constant inhabitant of the œsophageal diverticula of the mosquito The yeast cells are injected into the wound by the insect when feeding, but are mostly sucked back again if the mosquito is allowed to finish its meal In the last year or two several deaths have been reported following mosquito bites which were apparently highly septic It seems likely that these results have been due to the mosquitoes having temporarily harboured virulent streptococci in addition to the normal yeast cells Horse-fly bites also are often highly septic, and cases are on record where anthrax has been inoculated by the bite of a horse-fly

Individual preventive measures against mosquito, midge, and fly bites consist in keeping the insects at a distance either by smoke from a fire or from tobacco, or by the application to the skin of some essential oil, such as that of citronella, which is a constituent of numerous proprietary articles designed for the purpose A useful prescription is—

℞ Ol cedri, ʒiss
Ol citronellæ, ʒiiss
Spt. camphoræ ad ℥i, misce.

This should be smeared on the skin of the exposed parts as often as is necessary. Cod-liver oil used in the same way has been highly recommended The irritation of a mosquito or fly bite may be allayed by gently rubbing the puncture with a moist cake of soap, or by applying a 1 per cent alcoholic solution of menthol, or 1–20 watery carbolic lotion Hydrogen peroxide or weak ammonia solution dabbed on are useful also If the bite shows any signs of being a septic one, it is important that measures should be taken at the earliest moment to combat the sepsis, either by constantly renewed hot boric fomentations or, if a limb is implicated, hot saline arm or leg baths, or Bier's treatment or antistreptococcal serum also may be advisable

Lice, Bugs, and Fleas

Methods for the destruction of lice, bugs, and fleas scarcely come within the scope of this article, but it may be mentioned that as a preventive against the bites of fleas the application to the skin of oil of pennyroyal, oil of birch tar (which has the not unpleasant smell of Russia leather), or oil of lavender, or the dusting of powdered pyrethrum, menthol, or camphor into the socks or underclothing are of service It should be remembered that fleas breed in cracks in floors and wainscots, that unoccupied fleas usually lie in wait on the floor, so that anti-flea preparations should be applied chiefly to one's legs or their coverings

The irritation of a flea-bite can be allayed by applications of 1–20 carbolic acid lotion or by the following ointments —

R
Ac carbol, ♏x
Menthol, gr v
Zinc oxide, ʒi
Adipem prep ad ℥i

or
Hyd ammon, gr x
Liq picis carb ʒi
Ung paraffin B P ad ℥i

Or by applying one drop of—

Ac carbol }Partes æquales
Spt vini meth

Some fortunate individuals appear to be naturally distasteful to fleas, and others possess, or acquire, a relative immunity to the effects of their bites The irritation caused by poison hairs of "woolly-bear" caterpillars may be allayed by bathing with a weak solution of ammonia or 1–20 carbolic lotion, or the application of moist sodium bicarbonate Castellani and Chalmers advise bathing with a 2 per cent sodium bicarbonate lotion followed by the application of a 10 per cent ichthyol ointment Kirkland (1907) advised that the following lotion should be well rubbed in —

R Ac carbol, gr xxx
Zinc ox, ʒiv
Aq calcis ad ℥viii
M ft lotio

Harvest Bugs

The familiar "harvest bugs," which are really the six-legged larval forms of various species of the acarid *Trombidium*, are normally parasitic on various insects, but readily attack man when he gives them the opportunity by walking through the grass or vegetation on which they are living

These larvæ are usually supposed to burrow into the human skin, or at least to penetrate the hair follicles, but Ewing in U S A. (1921), as a result of some careful observations on his own leg and ankle, found that this was not so The mites were from three to seven times too large to enter a sweat pore or hair follicle and were merely attached by their mouth parts, about 80 per cent on the smooth surface of the skin and 20 per cent at the bases of hairs with their mouth parts thrust down the hair follicles The characteristic burning sensation began in a few hours and increased for 36 hours

Protection from the attacks of these larval mites can be obtained by sprinkling flowers of sulphur or powdered naphthaline into the stockings and underclothes from the knee downwards The mites can be removed by mopping the skin with benzine or petrol or taking a warm salt bath, and the itching can be allayed by one of the ointments suggested for flea bites

Bees, Wasps, and Hornets

The sting of a bee, wasp, or hornet is always painful and may be dangerous Danger may arise on account of the situation of the sting—e g, in the tongue or fauces—when the great swelling which ensues in these regions may obstruct respiration and cause death from suffocation Such accidents are apt to happen to those who devour fruit without inspection sufficient to detect a concealed wasp

It is often stated that the serious symptoms of collapse and even death which occasionally follow a bee or wasp sting in a healthy person are due to the sting having penetrated a vein so that the venom is injected directly into the circulation This may sometimes be the case Another explanation may be that occasionally patients become anaphylactic to bee or wasp venom, and certainly some of the cases described have shown symptoms which might be explained as profound anaphylactic shock. It may be possible also that the venom of individual insects may, under certain conditions, be of exception potency

The sting of the bee and wasp is complicated, but its working is entirely reflex, so that it is easy to get a severe sting from a bee s abdomen which has been for many hours separated from its thorax The poison sac and glands are usually left behind by the bee attached to the sting The poison forming apparatus consists of a long acid-forming gland and a much smaller alkali forming one A detailed study of the poison of some 25,000 bees was published by Joseph Langer in 1897. He found it to consist of formic acid plus an organic base The pure poison placed on uninjured skin produced absolutely no irritant effect, but caused a marked reaction on the mucous membrane of nose or eye The slightest break in the skin surface, or a needle puncture through a drop of the poison caused typical effects—i e, local necrosis surrounded by hyperæmia, œdema, and infiltration of leucocytes Further studies on bee poison were published by F Flury in 1920 He had investigated the poison from some hundred thousand bees and found that apart from the formic acid a considerable portion seemed to be lipoid in character By hydrolysis he was able to split off cholin, glycerol, phosphoric acid, palmitic and other fatty acids, an indol derivative, presumably tryptophane, and an unidentified non-nitrogenous component The latter he believed to be the active component of bee poison It produced hæmolysis and behaved like the hæmolytic saponins Flury regards bee poison as a complex of lecithin with basic components, showing resemblances on the one hand to the protein-free sapotoxins, and on the other to poisons of the cantharidin type Some snake venoms include saponin-like poisons (krotalotoxin and ophiotoxin) which account for their hæmolytic properties The potency of cantharidin as an irritant poison explains the local inflammatory reaction resulting from a bee sting

Treatment of a bee or wasp sting consists, first of all, in removing the sting This should *not* be laid hold of with forceps or fingers and pulled out Such a proceeding will squeeze the poison sac and force more poison into the wound The sting should be lifted or scraped out with the blade of a knife or the edge of a long finger-nail The application usually recommended is solution of ammonia It is important that this should be dabbed on and not rubbed, or it will rapidly remove the epidermis In the absence of ammonia, gentle rubbing with a moist cake of soap may be tried The application of a bag of washing blue is a household remedy of great popularity Hot fomentations are useful in relieving the pain of severe stings While the poison of the bee is acid, it was pointed out by E R Speyer in 1919 that that of the wasp is alkaline and that therefore in the case of wasp stings an acid application, such as vinegar, should be more effective in relieving the pain than an alkali

J F D Donnelly (1898) recommended ⅙ gr of cocaine dissolved in a few drops of water and rubbed on the puncture with the finger He found that this almost removed the pain, and a second application 1–2 hours later completed the cure One would expect hypodermic injections to be even more effective Pugnat (1918) found that the immediate local application of a saturated solution of aloes in alcohol was of material benefit in treatment of wasp stings and insect bites He found that if the solution were rubbed in immediately no local or general reaction took place Langer, in his experimental studies, found that bee poison was very rapidly destroyed by pepsin, but I can find no record of this preparation having been used clinically

The treatment of cases where sudden collapse follows the sting of a bee must be on the usual lines for the treatment of shock and collapse

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LEEDS MINISTRY OF PENSIONS HOSPITAL —Princess Mary last week opened this new hospital at Chapel Allerton, on the outskirts of Leeds The nucleus of the building was Gledhow Grove the former residence of Mr F J Kitson The hospital will hold 260 patients, and there are recreation grounds and workshops which will be rented by firms making artificial limbs The arrangements will permit of dealing with 10 out-patients daily The institution is described as the finest Ministry of Pensions hospital in the country.

Special Articles.

MEDICINE AND THE LAW.

Allegation of Mistaken Diagnosis: Medical Officer of Health's Successful Libel Action.

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West Bromwich C B

The year 1926 was apparently not an easy one for the medical department A temporary assistant was employed to complete the medical inspection in the schools, and pressure of work no doubt accounts for the somewhat meagre information given in the report by Dr A B Hamilton, the deputy school medical officer It contains little besides the statistical details required by the Board. Records from the maternity and child welfare centre are obtained, but no system of automatic transfer to the school medical department is in operation A survey of all cripples attending school showed that out of 76, 47 had had complete or partial treatment and 29 had had none There is no orthopædic scheme, although the authority defrays the whole or part of the cost in necessitous cases attending the orthopædic hospital Minor postural defects are treated by remedial exercises at the clinic, and breathing exercises are taught to children after their tonsils and adenoids have been removed There are no open-air schools or school baths, and no provision is made for blind, deaf, epileptic, and mentally or physically defective children An experiment to demonstrate the properties of vitaglass was started in Greets Green infants' department

Dumfriesshire

Dr John Ritchie, the S M O , says that there is much room for improvement in the hygiene of the schools The statistical details required in Scotland are not the same as in England and Wales, and thus, together with a different method of recording defects, largely accounts for the small proportion of defects found For instance, pediculosis is recorded in 0 18 per cent of children, but this only refers to those on whom lice were discovered " in considerable numbers," and the incidence of impetigo is given separately for the head and body The personal factor in all estimates of general condition makes individual comparison almost impossible Dr Ritchie records the nutrition of Dumfriesshire children as: " Above the average," 43 03 per cent , " average," 27 09 per cent , and " below average," 29 76 per cent but it is not stated whether any formula or figures of weight and height were used as a standard, or whether the estimate is purely clinical, and it can hardly be assumed that so large a percentage of the children are of first-class nutrition Dr. J. F Davidson compares the heights and weights of children examined between 1911–15 with those of children seen between 1919 and 1924, and concludes that post-war children compare favourably with the pre-war in nearly every age-group Very detailed statistical tables are given, showing the percentage of defects in boys and girls, of all the major and minor defects found during the medical examinations An immense amount of work is here represented, the value of which is doubtful The annual report offers a great opportunity of interesting the parents and the layman and, by drawing conclusions from the conditions found, of showing the way to health To record the findings statistically is not enough.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED MAY 14TH 1927

Notifications —The following cases of infectious disease were notified during the week —Small-pox, 271 (last week 337) scarlet fever 1411 . diphtheria, 838 enteric fever, 75 , pneumonia 973 , puerperal fever, 41 ; puerperal pyrexia, 127 , cerebro-spinal fever 13 · acute poliomyelitis 6 · acute polio-encephalitis 2 , encephalitis lethargica, 25 , continued fever, 1 , dysentery, 9 , ophthalmia neonatorum, 123

Cases of small-pox were notified from the counties of London 2 (Hampstead and Poplar), Derby 4, Durham 102, Lancaster 4, Lincoln Lindsey 1 (Spilsby), Northumberland 17, Warwick 2 (Coventry and Nuneaton), Yorks North Riding 1, West Riding 65, Monmouth 73 The last of the quarantine cases has been discharged from Hendon (Middlesex)

Deaths —In the aggregate of great towns, including London, there were 1 (1) deaths from small-pox, none from enteric fever, 57 (0) from measles, 5 (0) from scarlet fever 24 (8) from whooping-cough, 30 (3) from diphtheria, 59 (13) from diarrhœa and enteritis under 2 years, and 47 (8) from influenza The figures in parentheses are those for London itself, where the small-pox death was registered from Hampstead

The Case of Typhus Fever in Sunderland

We are indebted to Dr E Thorp temporary M O H of the county borough of Sunderland, for the following notes on the case of typhus fever notified in the Registrar-General's weekly return No 18, 1927, as having occurred in Sunderland Port Sanitary District

The port sanitary inspectors had visited the s s *Capitaine Henri Rallier* on April 28th, the day of its arrival in this port, when the captain reported " All well " The ship was revisited the following day, when the master reported that a seaman aged 19 years had been attended by Dr Ayre Smith, who ordered his removal to the Royal Infirmary, Sunderland, as suffering from pyrexia and pulmonary congestion In view of the doctor's report the case was treated as non-infectious The ship left Sunderland on April 30th and proceeded to Dieppe The patient at the Royal Infirmary was placed under the care of Dr J B Waters, who asked me to see the man I saw him on May 2nd, but came to no definite conclusion On May 3rd I had him removed to our isolation hospital as a suspicious case of typhus and on May 4th Dr W V Shaw, of the Ministry of Health, and myself were both of the opinion that it was a definite case of typhus fever

The history as given at the Royal Infirmary was of pain in chest of six days' duration, malaise fever, and a headache for the first three days No vomiting , bowels constipated , rash had appeared on body and limbs during the past few days On admission a faint purplish subcuticular rash not raised above surface was present on abdomen and chest, and more marked on thighs and legs—extensor aspect Faint staining on right arm and back—remains of rashes The mottling became more marked the next day On May 2nd the pathological report showed a negative Weil-Felix reaction and a negative Widal The urine continued bile, also blood

The patient had joined the ship at Havre and had only been 18 days on board when removed to the infirmary The louse found was pediculus pubis

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BARBADOS GENERAL HOSPITAL —The report has been issued of a subcommittee of the Public Health Commission appointed to inquire into the system of administration of the General Hospital, Barbados The institution costs about £17,000 per annum, most of which is provided by the Colonial Treasury , there is accommodation for 220 patients , the average number of in-patients is 3566 and of out-patients and casualties 35,000 There are three resident surgeons, one of whom is on duty for 24 hours at a time, while the other two have what the committee think " must often be a burdensome amount of relaxation." The salary of the resident surgeon, which has not been increased for 30 years is insufficient to secure the filling of the post by men not only of good training, but with some experience of the working of a hospital The salary should be approximately £600 a year, with free quarters, and the committee make the carefully restrained comment that " the practice of appointing inexperienced men who very often have just graduated in medicine to be responsible for the administration and a certain amount of the medical work needs reconsideration " The standard of training for the nursing staff " seems to require improvement " There is no definite scheme of training, lectures by the resident surgeons are " given casually " and examinations " may be deferred indefinitely " Finally the committee find that " there is no work performed which is worth the name of pathological investigation," and they recommend that the bacteriologist should be responsible for all such work. The general death-rate of the hospital during the last five years was 7 8, including cases which died within 48 hours of admission The number of patients cured or improved is in accordance with the present standard of knowledge has been notifiable for some years during the third quarter During 1926 both notifications and deaths showed an increase and the death-rate from diarrhœa and enteritis under 2 years of age was double the English rate of 8 7 The use of the Schick test for scarlet fever admissions since 1924 shows that 50 out of 81 children under 5 years were positive, 55 out of 129 of the 5–10 age-group, 12 out of 54 of the 10–15 4 out of 15 of the 15–20, and only 1 out of 8 above the age of 20 Of four new probationer nurses one only was positive and had to be immunised

Referring to the high tuberculosis death-rate, Dr Wood points out that this excess occurs in neighbouring Merseyside areas and that the Bootle rate for the ten years ended in 1925 was 1 8 During 1926 two-thirds of the pulmonary deaths occurred between 20 and 55 years of age and two-thirds of the non-pulmonary under 15 years of age A light treatment clinic by general irradiation at Linacre Hospital, opened in October, 1925, has given satisfactory results, although its eccentric position interferes with regular attendance of the out-patients Some of the outstanding successes were a marasmic 3 months' old baby, a man with sacro-iliac disease and a sinus, and another man with tuberculous epididymitis and a sinus The year's results of the V D centre show that only 23 cases were discharged after completion of treatment and observation, whereas 69 ceased attendance before completion of treatment and 49 before final tests of cure

To the maternity home 16 cases were admitted for antenatal treatment and 167 for confinement There were no maternal deaths, eight stillbirths, and four deaths of infants within ten days of birth The average duration of stay was 14 1 days, and the cost worked out at £9 per case, of which £2 6 was contributed by the patients The neonatal mortality has been practically stationary in Bootle for 25 years There were 25 births of illegitimate infants and 10 deaths, equivalent to a rate of 400 The council have decided, in accordance with the Ministry's suggestion, not to attempt to recover the fees paid by them to medical practitioners called in to give aid in the case of discharge from the newly-born infants' eyes

Dr Wood, in discussing the housing shortage, shows that nearly 500 houses have been erected by the municipality during the last seven years and that this new housing provision " can be repeated without risk of overbuilding " The percentage of families sharing a house, which in 1901 and 1911 was 10 6, in 1921 was 13 6 , and in order to revert to the old standard 1371 new houses are needed

Borough of Stafford

1926 statistics —Population, 29,270 Birth-rate, 16 4 Death-rates per 1000 of the population All causes, 10 8, tuberculosis, 1 06 , cancer, 1 26 , respiratory diseases with influenza, 2 1 , heart disease, 1 8 Death-rates per 1000 births neonatal, 33 , infant, 60 , maternal from childbirth, 6 2

Dr J T MacNab reports that the progress of the new bio-aeration sewage disposal scheme has been delayed by difficulty in dealing with the spent liquor from the gasworks Experiments are being made with a view to reducing the amount of this liquor discharged into the sewers, and it is hoped that the difficulty has now been overcome

The water-supply has been carried to Dunston, four miles from Stafford, and the houses on the line connected up The new reinforced concrete service reservoir, to hold a million gallons, has been begun Six of eight private pumps at Doxey were found to yield polluted water and three of the houses have been connected to the mains The trouble with stoppages of waste-water closets continues There were 1374 stoppages among 2243 closets, and in 85 cases the trouble was caused by cans and scrubbing-brushes being dropped down the w c Uncovered wooden tubs for house refuse are being gradually replaced by iron bins

The town is fairly free from smoke except at the north end, where 22 stacks from the salt works emit smoke over a large area and cause a considerable nuisance There is said to be a difficulty in evaporating brine without causing smoke It is difficult to understand why Fish-frying has been declared an offensive trade Several new applications were refused on account of unsuitability of premises, and the public demand is said to be well met by the 24 fried-fish shops on the register The new houses erected numbered 156, more than in any other year since the war, about half municipal and half by private enterprise with subsidy Municipal houses only accommodate families catered for by the private builder before the war and do not touch the needs of the unskilled worker or casual labourer with a family of young children Dr MacNab does not favour flats, but advocates houses in rows or terraces at even more than 20 to the acre and the omission of the separate bath-room and hot-water cylinder and the substitution of a bath in the scullery with hot water run into it from a copper on a slightly higher level

The non-structural regulations of the Milk Order of 1926 came into force on Oct 1st, and a good deal of difficulty is being experienced in enforcing the clean milk provisions with respect to cleanliness of udders, milking-stools, &c , but some progress is being made, and the good results obtained in one or two cases are being put forward as examples and incentives to the laggards The 48 premises, on which ice-cream is made, were kept in a generally clean condition Stafford appears to have about one fried-fish shop and two ice-cream shops for 1000 of the population

The more severe cases of scarlet fever are being treated with antitoxin with encouraging results, and immunisation against diphtheria is offered through the welfare centre for children under school age Of the 29 infant deaths 17 were from congenital malformations and premature birth

REPORTS OF SCHOOL MEDICAL OFFICERS

Name of district	No on roll	Av elem school attendance	No of routine children examined	No of special examinations and re-inspections	Percentage of children found on routine examination requiring treatment *
Margate	3,300	2,865	977	970	11 9
West Bromwich	14,354‡	—†	4,281	3,695	28 5
Dumfries-shire	12,781‡	—†	4,908	3,552	9 63

* Excluding uncleanliness and dental defects † Not given
‡ Numbers for which accommodation is provided

Margate

Dr Rowan McCombe shows that the attendance of children at the treatment clinic has not diminished under the scheme by which payment for treatment is collected from parents Payment is not pressed for, but is rather accepted as a voluntary contribution, and the total amount received has been satisfactory Delicate pre-school children attend the infant welfare centre and are examined by the school medical officer A feature of the Margate schools is the encouragement given to children to bring their midday meals and the arrangements made for warming the food The nature of the food and the method of taking it can be supervised, the long walks to and from home during the winter months are avoided, and the children are happy together Dr McCombe comments on the small amount of heart disease and the absence of rheumatism among the school population, giving as a reason the dry and bracing climate of Margate

Kent is badly in need of provision for mental defectives , it is almost impossible to get accommodation for this class of pupil A committee has been formed for the Isle of Thanet, and an occupation centre is to be started in Margate

Ninety-one children are employed in the district All are strong and healthy, and but few are working overtime, which satisfactory state of affairs has fully scores in the group tests or in the Binet test may prove to have low intelligence when examined by the Porteus tests, and many boys whose intelligence is low in the verbal tests frequently score high in the Porteus tests These exceptional cases are numerous and important Moreover the Porteus tests seem to furnish a reliable estimate of industrial capacity and of temperamental type They specially indicate such qualities of intelligence as ability to plan strength of inhibitions and carefulness of execution In addition to these advantages the Porteus tests yield a mental ages core in terms of practical social efficiency as opposed to the intellectual efficiency revealed by the Binet tests "

Considering Doll s experience as psychologist in the reformatories and jails of New Jersey his testimony must be regarded as having weight in this matter. It might be noted that I have never made any claims for the tests which go beyond this statement of Doll s

In conclusion, might I state once again what I have already in many publications given as my position in this matter I do not, and have never claimed that the maze tests are adequate measures of temperament, or moral character, or intelligence They do seem, however, to give some measure of certain important temperamental or social traits I have never advocated that they should be applied alone nor their single verdict relied upon except where other tests are clearly inapplicable They are by no means perfect instruments of diagnosis or research —the psychopathic frequently and the steady-going defective rarely, may slip through their meshes so that failure in the tests is always more significant than success They are not tests of planning capacity as such *but of the individual's tendency to use planning capacity in a simple situation* Unless practice effects are allowed for, they cannot safely be reapplied to the same children and hence their reliability cannot be tested by the ordinary reliability coefficient formulæ Taken by themselves, as measures of moral worth, they are decidedly inadequate I should as soon expect every criminal to fail in the tests as I should every insane person In other words I have no more faith in the maze tests than I have in tests in general, they merely represent one angle of approach to the problem of social and mental diagnosis and are not to be relied upon too implicitly. In short perhaps the best that can be said of the maze tests is that they are among the best of a poor lot However, until someone devises a better test for temperamental traits I shall continue to recommend their use One claim also I shall continue to make without fear of refutation—there is no performance test in use at present which has had so much work done on it in the way of proving the test itself and of providing data for its interpretation, nor has any other performance test been more widely or more variously employed.

The belief that I have made other claims for the tests may be due to the fact that I have consistently criticised the practice, at one time so common in America, of relying entirely for all purposes of mental diagnosis and prognosis on a Binet test alone This attitude has been twisted by some to mean that I believed that my test would do everything that was left undone by the Binet and that any examiner who was armed with a maze test and a Binet was thereby a clinical psychologist !

Might I add that Dr. Healy's work, and particularly his attitude to mental testing in general, is to my mind thoroughly admirable In clinical work I believe in the adequacy of his method and I use some of his tests P C II is a very valuable test, and will occupy a permanent place in clinical examinations It differs considerably in nature from the maze and as each has its value there is no need for drawing invidious comparisons between them

I am, Sir, yours faithfully,

S D PORTEUS,
Professor of Clinical Psychology, University of Hawaii
March 16th 1927

RADIOGRAPHY IN THE TREATMENT OF FRACTURES

To the Editor of THE LANCET

SIR —We are astonished to see in the columns of THE LANCET for last week a letter. under this heading, signed by Dr C Leonard Williams honorary secretary of the Todmorden Medical Society, referring to a circular letter issued by the Medical Defence Union to its members only. and which was for obvious reasons marked " private and confidential "

This circular letter was in the nature of friendly warning and advice to members of the Medical Defence Union from the Council based on its experience in a large number of recent cases It is obvious that this circular letter has been misinterpreted but public discussion of a matter of this sort in THE LANCET could only defeat the object of our Council in marking this letter ' private and confidential," and would bring about the very results which are shadowed in the earlier paragraphs of Dr Williams's letter

Needless to say, our Council is prepared to discuss the matter privately with any member who shares the views expressed in Dr. Williams's letter and we have no doubt that any fears that he may share with Dr Williams and his Society will be set at rest

We are Sir yours faithfully,
HERBERT F WATERHOUSE.
President
JAMES NEAL
General Secretary
Bedford-square, W C May 23rd, 1927

A POINT UNDER THE MIDWIVES ACTS

To the Editor of THE LANCET

SIR —Medical practitioners have recently been refused payment for assisting midwives in emergencies by the Devon County Council on the ground that the accounts for such assistance have not been sent in within two months from the date of the first attendance Reading Section 2, Subsection 2 of the Midwives Act 1926 and Section 14 Subsection 2, of the Midwives Act, 1918 together, it is a condition of payment of such fees that the accounts must be rendered within two months from the date of the first attendance and therefore strictly speaking the Devon County Council are within their rights as laid down by statute in refusing to consider a claim for fees under the Midwives Acts which are rendered after the two months statutory period

Unfortunately no notice of this regulation is conveyed to the medical practitioners and those who are not familiar with the Midwives Acts are consequently not aware that it is important to render their accounts as soon as possible Even if there are solid grounds for stringently requiring early rendering of such accounts it would seem to be only fair that due intimation of this most unusual condition should be communicated to the practitioners concerned

The matter is not one of interest to the medical profession only but also concerns the public very seriously, since the result of failure to obtain payment under such circumstances has led medical practitioners to decline in future to attend cases on the summons of a midwife It would be very unfortunate if this state of affairs should continue or extend

I am, Sir yours faithfully,
HUGH WOODS
General Secretary, London and Counties Medical Protection Society Ltd
Victory House, Leicester square, London, W C 2,
May 19th 1927

*** In the absence of official warning as to the regulations enacting the rendering of these accounts within two months it is hoped that practitioners will make a careful note of the above communication. The need for promptness insisted on by the Midwives Acts is due to the migratory nature of the constituency concerned —ED L

Correspondence.

"*Audi alteram partem.*"

MAZE TESTS AND SOCIAL ADAPTABILITY

To the Editor of The Lancet

Sir,—In your issue of Nov. 20th, 1926, there appeared an article by Dr. R. F. Jarrett which dealt in part with the application of my maze tests to 100 youths in the Borstal Institution. Following this article a letter from Dr. R. Evelyn Lucas was published which stated that:—

> "The Porteus 'maze' tests would hardly seem the best choice for determining the individual's apperceptive abilities. Their value lies in estimating powers of mental representation and planfulness in dealing with geometrical figures rather than with a concrete situation such as the individual is likely to meet with in ordinary daily life. To be sure Porteus himself claims considerably more than this for the test, but his statements have not been verified by other investigators. In my opinion, by far the most valuable test of this nature, and one which has a fairly high correlation with social apperceptions, is Healy's 'Pictorial Completion II.'"

The number of misleading statements included in this brief paragraph is such that it would seem desirable that a brief summary of the present status of the maze test be given for your readers who might otherwise be led astray by ill-informed or unsupported "opinions." In the first place, Dr. Jarrett was probably not concerned particularly with the individuals' apperceptive abilities. If, however, he was concerned with estimating, the tendency of his subjects to exercise planning and prudence in a simple situation or conversely to act impulsively or in a mentally confused manner when faced with a new problem, then probably Dr. Jarrett's choice of tests was a wise one. In any case he is not alone in this matter. A recent survey of mental clinics in New York State, by Boyakin[1] showed that over 40 per cent. of these clinics were using the maze test. The Pintner-Paterson scale was next on the list, and amongst the other 68 tests listed the combined percentages for Healy Completion I and II was 25 per cent. If, as your correspondent states, this test is so much more valuable than the maze it is evidently not as well known in America as it should be.

In the second place, your correspondent's description of the maze test as estimating "powers of mental representation of geometrical figures," would be recognised by any psychologist as being very inadequate, so much so as to make one wonder whether Miss Lucas has really had any experience at all with the tests. Such powers enter into an intelligent response to the tests to a very small degree unless the ability to trace a course with the eye for a few inches can be considered "mental representation of geometrical figures."

The further statement that I have made claims for the tests which have not been supported by other investigators is best answered by a brief summary of some of the literature evidently unknown to your correspondent. Morgenthau in "Some Well-Known Mental Tests Evaluated and Compared"[2] a monograph written with the advice of Drs. Healy and Bronner, comes to the following conclusion:—

> "The results obtained as to value of the tests were as follows. Stanford-Binet, Pintner, Alpha II and Porteus are valuable tests and should be included in individual case studies. In spite of their unmeasured reliability, Myers and Pictorial Completion II are also valuable tests, and should likewise be included."

She found that P.C. II and Porteus maze test correlated about the same with the Binet and rather highly with each other, the coefficient (0.70) being high enough to indicate a goodly measure of agreement and yet low enough to show that they are not both measuring the same capacities. This indicates that P.C. II is a very valuable test, but gives no shred of evidence for the opinion that it is far more valuable than the rest.

Arthur and Woodrow tried a number of performance tests with large numbers of clinic cases in St. Paul, U.S.A., and found that as regards discriminative value—*i.e.*, *power to distinguish* between ability at different chronological levels (as between eight and nine year ability for example)—the maze was among the best of the performance tests now available. Virginia Graham Taylor working with Jewish and Italian children obtained confirmatory data.

In an article, Comparison of Stanford and Porteus Tests in Several Types of Social Inadequacy, Cornell and Lowden's results confirm the claim that the maze tests are better measures of social adaptability than are the verbal tests. The constitutional psychopathic inferior group had a median Stanford-Binet of 13.25 years, as against 12.25 mental age score by the Porteus. A non-psychotic but mal-adjusted group had a Binet median age of 14.08 years and a maze score of 12.25 years—quite a significant difference. The so-called mentally defective group included cases on parole from institutions and they scored 10.21 years by the Binet, 11 years by the maze. Considering these high levels they were certainly not a typical feeble-minded group.[3]

In the Institute of Juvenile Research in Chicago, Worthington compared the maze with other performance tests and reported the results in an article, Study of Some Commonly Used Performance Tests. On the basis mainly of high correlation with the Stanford-Binet, inter-correlations, and normal distribution of results she picked four out of the eleven tests as being the best substitutes for a Binet Examination when this could not be applied. The four tests were Pintner-Toops, Seguin Form Board, Porteus Maze, and Trabue Completion.

In Frances Gaw's Study of Performance Tests[4] the introspections of seven psychologists who took the tests included the maze and Kelly's tests as the only tests of temperamental capacities. As regards the validity of the tests, that is to say actual proof that they do measure in part social adaptability, there are few studies, since to gather the necessary observations to serve as criteria is admittedly difficult. Elizabeth Ross working at Baldovan Institution found a correlation of 0.76 between Porteus age and ability in Handwork, the Binet mental age correlating with Handwork 0.69. In another investigation the Porteus correlated 0.81 with industrial rating of inmates, the Binet also 0.81, but the average of Binet and Porteus mental 0.87. Industrial capacity is of course an important factor in social adaptability.

Wildenskov has applied the tests at the Keller Institute in Denmark and confirmed results previously obtained by me (Porteus Labyrintskala, Nyt Tidsskrift for Abnormvoesenet). He states in his conclusions, that at the time of testing 100 inmates—

> "information was obtained of the practical ability of each individual from the people with whom they have been placed. A comparison shows that in the Porteus scale we have got a valuable addition to our test material."

Herring reports the results of a comparison between an experienced examiner's diagnosis of feeble-mindedness by means of observation of the child at work on the Porteus maze, plus the consideration of the Binet, Wilmer Form Board, Army Designs, case history, psychiatric and medical findings. He states that this diagnosis of degree of feeblemindedness practically agreed with the Porteus test results, a correlation of .937 being obtained.[5] As regards the validity of the tests for diagnostic purposes this evidence is of value.

Finally, as regards the application of these tests to delinquents, Doll in a paper entitled Education of Juvenile Delinquents[6] states:—

> "The Porteus motor intelligence tests should be applied whenever possible. Certain boys who may obtain high

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[1] Journal of Educational Psychology, September, 1926.

[2] Archives of Psychology, 52.

[3] Journal of Abnormal and Social Psychology, April–June, 1923.

[4] British Journal of Psychology, April, 1925.

[5] Journal of Educational Psychology, April, 1926.

[6] Journal of Delinquency, March, 1921.

to afford a satisfactory solution of the professional problems created by the establishment of the new Governments in Ireland. It is equitable as between autonomous Governments. It is practicable from an administrative point of view. Above all, it necessitates no change in the relations that have so long subsisted between the General Council, its Irish Branch Council, and the licensing bodies and medical practitioners of Ireland."

India

After briefly recording that the Legislature of the Province of Quebec had abrogated the 48th Section of its Medical Law, by which act practitioners registered in this country would henceforth be denied similar privileges in the Province, the President went on to refer to the visit paid to India during the winter months by Sir Norman Walker and Colonel Needham, on the invitation of the Secretary of State, with the concurrence of the Government of India and of the provincial authorities, which was successfully completed in March last. "The visit," he said, "was regarded as of deep importance for the future of Indian medicine and the Council's acceptance of the invitation addressed to its representatives had been rightly interpreted as attesting its sincere interest in India and its genuine wish to contribute to her progress in professional education. The Council owes a special debt of gratitude to its envoys for the way in which they have carried through their delicate and difficult mission, and for the happy impression of the Council's purpose and desire they have conveyed to the Indian authorities. They have now reported to the Executive Committee on those parts of their comprehensive survey that concern the immediate question before the Committee—namely, the continuance for a further period of the recognition granted to certain Indian medical degrees. A report of a satisfactory nature has been received regarding the efficiency of the Medical College at Singapore, and also reports dealing with Calcutta, and with the new universities of Rangoon, Patna, and Andhra, which call for detailed consideration. To these reports, and to certain larger questions of primary importance on which much has still to be reported, the Committee proposes to devote its July session. In particular it is imperative to discuss what steps can be contrived to maintain in India, for degrees that may be recognised for extra-Indian purposes, the standards of education and examination that are necessary to guarantee their sufficiency for registration and practice in this country. It is clear that recognition, renewed from year to year under conditions that cannot be fully complied with, does not afford a solution of the problem. The whole subject must be placed on a more satisfactory basis. The condition of periodic visitation and inspection through the direct agency of the Council is no longer practicable. The number of universities and medical colleges has greatly increased. They are scattered over a vast area from Bombay to Rangoon. And in future the high personal qualifications and ample experience of our present visitors may not be at our disposal. Thus it appears highly expedient that steps toward a new method should now be taken. These steps must originate in India, and we learn that Indian proposals bearing on the subject of central direction have already been under consideration by the Government and the Legislature. Whatever method is adopted it seems necessary for efficiency that it should be carried out as a function of Government or by some single authority in India with which the Council *could* communicate directly and from which it could obtain from time to time the information it requires to enable it to fulfil its duties under Part II of the Medical Act, 1886. In view of the commissions that will soon be set up to consider (inter alia) improvements in the machinery of Indian administration, it may be opportune for the Council to call the attention of the Secretary of State to the lacuna in medical organisation I have indicated. In order to give an opportunity for the initiation of improved arrangements in this regard the Executive Committee have at this session resolved to renew for one year more the recognition hitherto accorded to the medical degrees of Bombay, Madras, Lahore, and Lucknow."

Sir Donald MacAlister concluded by calling the attention of the Council, at the request of the Ministry of Health, to the fact that the Births and Deaths Registration Act, 1926, comes into operation on July 1st, and provides new forms enabling practitioners to furnish the precise information that is essential to the compilation of accurate medical statistics. The *President took the opportunity of warning medical* practitioners once again of the high importance which *the Council attached to accuracy in certification, as* shown by the Warning Notice.

A vote of thanks to the President was proposed by Sir Jenner Verrall and seconded by Sir Norman Walker, and the new members of the Council were introduced.

The Council acceded to the request of Mr. S. Cosgrave to have his name restored to the Dentists' Register, and later proceeded to the hearing of penal cases.

THE LISTER INSTITUTE.

ANNUAL REPORT FOR 1926-27

IN the annual report of the Lister Institute, presented at a general meeting on May 18th, reference is made to its incorporation as the British Institute of Preventive Medicine in 1891. Lord Lister took a leading part in its establishment, was the first chairman of council, and later president, and never ceased to take an active interest in its development. These facts were recalled in the address presented on the occasion of the Lister centenary last month by Sir James K. Fowler, who represented the Institute at the ceremony.

The report for the past year chronicles but few changes in the governing body, council, or staff. Dr. Andrew Balfour takes the place of the late Sir William Leishman on the council. The resignation of Dr. E. Atkin from the position of assistant bacteriologist is recorded, on his appointment as pathologist to the Brompton Hospital. Dr. J. A. Arkwright, F.R.S., has resigned his position as a salaried member of the staff of the bacteriological department, but will continue to work in the department, where Dr. H. B. Maitland has been appointed as an assistant.

The continued cooperation between the Institute and various other bodies is noted with appreciation. The financial support given by the Medical Research Council, the Department for Scientific and Industrial Research, and the British Empire Cancer Campaign to skilled investigators in the different departments has greatly increased the scientific activities of the Institute. A summary is given of the research work accomplished and in progress during the year. Altogether nearly 50 papers have been published from the five departments of the Institute, whose activities are outlined below.

Department of Bacteriology

In continuation of his work on the relation of vaccinia virus to the reticulo-endothelial system Prof. J. C. G. Ledingham has published a new series of experiments, the results of which show that the dermal reaction to the virus is annulled wholly or partially if Indian ink is simultaneously injected into the cutis with the virus or if the virus is superposed on sites previously infiltrated with Indian ink.

It would appear that the absence of naked-eye response to the virus under these conditions is to be correlated with the increased local defence following the *stimulation of the* reticulo-endothelial system by the Indian ink. The experimental results support the view previously advanced that the virus of vaccinia (or of variola) attacks primarily the reticulo-endothelial elements wherever situated *and not* epiblastic or epidermal elements as has been alleged. It may be noted also that vaccinia failed to elicit response in *the cutis of the* rabbit which had previously been the site

THE NATIONAL UNION OF SCIENTIFIC WORKERS

To the Editor of THE LANCET

SIR,—In an annotation which appeared in your issue of March 19th it is suggested that the National Union of Scientific Workers will find insuperable the difficulty of combining scientists in different lines of work. There is much to be said on the other side, but it is not my present purpose to say it; my object is merely to protest that you might have expressed that opinion without insulting the members of a profession as honourable as your own. You contrast university teachers with "those whose object in life is (or from their occupation ought to be) to earn dividends for shareholders," and in the next sentence make a veiled suggestion that these are comparable with those who would exploit medical discoveries for private gain. Your remarks are pointless unless they are interpreted to mean that industrial scientists take a different and less worthy attitude towards their work than their academic colleagues.

It is as ignorantly foolish to suggest that industrial scientists are engaged in manufacturing dividends as to suggest that the medical profession is battening on the miseries of mankind. It is true that in the present economic organisation of society, if there were no dividends there would be no industrial scientists, just as if there were no disease there would be no doctors. But to pretend that the ultimate results or necessary conditions of work are among the prime motives which determine the undertaking of it is a psychological fallacy that no intelligent person should commit. Most industrial scientists are not communists and may therefore hold that the earning of commercial profit is not inconsistent with service to the community. They may even hold reasonably that their work is likely to reduce rather than increase the divergence of interest between its sections. Nor is knowledge necessarily uninteresting because it is commercially valuable. It is as possible for the industrial worker to be inspired by a real love of his work for its own sake, and indeed as necessary to his success, as an elementary lecturer in a university or a panel doctor.

Writing for and on behalf of the G.E.C. Branch of the N.U.S.W., I am indeed prepared to maintain that, since the industrial scientist is usually a member of a team and free from temptation to an exaggerated individualism, his motives are usually purer and less self-regarding than those of the academic scientist. Doubtless our profession, like any other, including that of medicine, has its black sheep. But to pretend that the association of science with commerce must necessarily degrade the former rather than elevate the latter, is a despairing pessimism which is utterly unjustified by the facts.—I am, Sir, yours faithfully,

BERNARD P. DUDDING, A.R.C.Sc.,
F.Inst.P., M.B.E.,
Hon. Secretary of the Branch.
Research Laboratories of the General Electric Co., Ltd.,
Wembley, May 18th, 1927.

*** A medical man may not limit in any way the application of a fact which may prove useful to other medical men. The industrial scientist is under no such obligation and is entitled to demand, from employers or the community, a reward commensurate with the importance of his work. The National Union setting out to improve the status of the scientific worker must be prepared to support the claim of an inventor for adequate reward from his employer. In a conflict of this kind the medical man could not be engaged; he strives on the understanding that there will be no special payment for success, and that no information will be held up by him in the absence of direct returns. The university teacher or research worker adopts the same convention, because his investigations are undertaken at the expense of a body which has been endowed with the sole object of advancing knowledge. But a nation which honours its scientific discoverers honours itself.—ED. L.

GENERAL MEDICAL COUNCIL.

THE PRESIDENT'S ADDRESS

THE summer session of the General Medical Council was opened on May 24th, Sir DONALD MACALISTER presiding. After noting with regret the death of Sir Isambard Owen, the President made reference to the retirement of Sir Nestor Tirard and Sir E. Coey Bigger, the Crown members for England and Ireland respectively, whose terms of office had expired. He recorded the valuable assistance rendered to the Council by the former for 32 years in connexion with the Pharmacopœia, as Secretary, Reporter, and Medical Editor, and as representative of the Council on national and international committees. To Dr. H. H. Dale, the new Crown member in Sir Nestor Tirard's place, the President extended a cordial welcome, alluding to his great eminence in the application of pharmacological and biochemical science to medicine, and to his administrative experience in many fields, as secretary of the Royal Society, and head of the department of biochemistry and pharmacology in the Medical Research Institute. Sir E. Coey Bigger's retirement, the President pointed out, was a consequence of the establishment of the Irish Free State, in which he is now a senator and chairman of the Public Health Council. Colonel Thomas Sinclair, M.P., a senator of Northern Ireland, who takes Sir E. Coey Bigger's seat as a Crown member, is already the representative on the Council of Queen's University, Belfast, so that for the time being the seat for that University is vacant. The President further reported that Sir Humphry Rolleston, formerly representative of the Royal College of Physicians of London, had become the representative of the University of Cambridge in place of Dr. W. L. H. Duckworth, while the College had sent to the Council a worthy successor in the person of Dr. Farquhar Buzzard, whose football record he did not forget to mention while valuing him as a neurologist.

Ireland

The President continued: "I mentioned last November that the Medical Act, 1926, of the Irish Free State would expire in February, 1927, unless fresh legislation was carried through. A Medical Act, 1927, was accordingly passed in that month to enable the existing arrangements to be continued until June 21st, 1927. In the meantime, conferences have taken place between the Governments of Great Britain and Northern Ireland and the Free State, at which I was courteously invited to be present. These have happily resulted in an agreement which has been signed on behalf of the three Governments, has been ratified by the Free State legislature, and now awaits parliamentary ratification in this country. It provides that the Medical Acts hitherto in force in Great Britain and Ireland shall continue to apply to the Free State, as concerns the functions, constitution, powers, authorities, and jurisdiction of the General Medical Council and its branch councils. It provides that the direct representative for Ireland shall continue to be elected by the registered practitioners resident in any part of Ireland, and that the Crown member for Ireland shall be appointed by His Majesty in Council on the recommendation of the Governor of Northern Ireland. And it ensures that practitioners registered in the Medical Register shall be entitled to be registered and to practise in the Free State. By an Act of the Oireachtas a Free State Medical Council has been established to maintain a local medical register distinct from the General Register, and to exercise in regard to it a jurisdiction distinct from that of the General Council. But the jurisdiction of the General Council in Southern Ireland will not be displaced or diminished for any purpose of admission to or removal from the General Register, or of maintaining the standard of professional education and examination in reference to registrable qualifications granted in Ireland. The provisions of the agreement appear to me, after careful and indeed anxious consideration, of the blood under physiological and pathological conditions are in progress

Dr J O W Barratt's observations on the anticoagulant effect of hirudin have been completed The experimental results obtained indicate that the interaction of hirudin and thrombin corresponds to that of weak acid upon weak base and show that the hypothesis of an absorption of thrombin by hirudin is untenable The experiments made also show that both hirudin and thrombin are present in true solution in the concentrations employed

Prof V Korenchevsky, in coöperation with Miss M Schultess-Young, is attempting to isolate the specific sexual hormones

He has also studied the influence of the removal of the thyroid, parathyroid, and sexual glands and of thyroid feeding on the regulation of the body temperature After thyroidectomy, cooling causes a much more pronounced fall, and warming, a much less increase of the body temperature than is observed in normal animals Prof Korenchevsky concludes from his experiments that the thyroid gland plays an important part in the regulation of the body temperature, and therefore its condition has always to be taken into account in considering the resistance of different individuals to cold or heat and also in the diseases accompanied by fever

Miss E M Hume and Miss Henderson Smith have been engaged in a lengthy research with the object of improving the technique of estimating vitamins A and D, and new methods have been devised

Since the introduction of a new technique for estimating vitamin A it has become necessary to revise many old determinations Yeast fat is now found to be deficient in vitamin A, and the vitamin D value, both before and after irradiation, of different samples of yeast fat, which has a high content of ergosterol is now being studied The previous work of Dr Harriette Chick and Miss Margaret H Roscoe showed that the green leaves of spinach (*Spinacia oleracea*) while a rich source of vitamin A, contained vitamin D in small amount only, even when grown in spring and summer under maximal natural illumination Nevertheless, as Hess first showed, similar leaves after short exposure to ultra-violet irradiation from a mercury arc lamp acquired high antirachitic value The strikingly different effect of sunlight and the radiations from a mercury arc might be associated with the much greater intensity of the smaller wave-lengths in the latter or the disappearance of vitamin D from green leaves almost as quickly as it is formed To test the latter hypothesis Miss Roscoe has grown spinach and gathered it in sunshine and fed it immediately to the experimental animals Under these circumstances, however, spinach was found to possess only a just detectable antirachitic value It would appear from the recent discoveries of Rosenheim and Webster, and Hess and Windaus that the first explanation is the correct one They found that vitamin D is activated ergosterol, which substance has a specific absorption for radiant energy of a wave-length absent from sunlight but present in the radiations from the mercury arc

Marine green organisms such as *Nitzschia* can no longer be regarded as the ultimate source from which the cod and other fish obtain the antirachitic vitamin stored in their liver oils, Miss Leigh-Clare has been unable to detect the presence of vitamin D in *Nitzschia*, whether the diatom was grown in the laboratory behind window-glass or on the roof of the Institute, protected with a covering of windolite, a material fairly transparent to ultra-violet light of the refrangibility occurring in sunlight Miss Leigh-Clare has also examined the stomach oil of the mutton bird or Australasian petrel (*Œstrelata lessonii*) for its content of vitamin D and has found it present in a concentration equal to about one-fifth that found in a good cod-liver oil The interest of this investigation lies in the fact that the mutton bird is believed to consume the same food as the Australasian red cod—i e , a crustacean known as " whale feed "

A comparison of biological and colorimetric methods of titrating vitamin A was undertaken at the request of the League of Nations Conference on Standardisation of Biological Values at Geneva in 1925

The results of biological titration by the different laboratories of material provided indicated a large experimental error, but nevertheless showed the vitamin A value of various samples of Norwegian cod-liver oil to differ from one another by as much as one hundred fold The results of the colorimetric titration of any one oil by the method of Drummond and Rosenheim agreed with the series of values obtained by the biological method in the different laboratories, as nearly as the latter agreed among themselves At the Lister Institute the work was entrusted to Miss Soames, assisted by Miss Leigh-Clare These workers titrated the antirachitic value of the oils in addition to that of vitamin A with the interesting result that among the whole series of oils the former was found to be much more uniform than the latter This is possibly attributable to the fact that the oils were no longer fresh and vitamin A is much more unstable than vitamin D

Dr Chick and Miss Roscoe have confirmed the recent work of Goldberger and his colleagues, which indicated that " water-soluble B " must be regarded as a combination of the antineuritic vitamin with a second factor, probably identical with the principle in diet which prevents pellagra The work is being continued by a study of the distribution of these two principles (*a*) " antineuritic " and (*b*) " anti-pellagra " and an attempt to separate them when present together in various rich sources of vitamin B

A method has been evolved which permits of accurate observations on the nitrogenous metabolism of small animals—e g , rats—and Dr Chick and Miss Roscoe are making re-determinations of the relative values of some of the more commonly occurring proteins for maintaining nitrogenous equilibrium in the rat It is proposed to examine a series of proteins in their natural as well as purified state and to extend the investigation to naturally occurring nitrogenous substances of a non-protein nature

Dr Margaret A Boas (Beit Memorial Research Fellow) has continued her study of the influence of dehydration on the nutritive properties of egg-white

With regard to the biological action of light, Hess showed that rickets could be prevented or cured by feeding with the cholesterol esters in the skin (lanolin) after irradiation with ultra-violet light, and suggested that a possible source of vitamin D was the absorption of lanolin which had been activated by sunlight Miss Hume, Dr Lucas, and Miss Henderson Smith have experimentally tested this suggestion

Young rats and rabbits were placed upon a diet on which they would inevitably suffer from rickets 0 2 g of irradiated cholesterol in hardened cotton-seed oil was applied daily to an area of depilated skin equal to about 1 square inch, every precaution being taken to prevent the animals ingesting any of the material The treated animals did not develop rickets, the controls did Whether, owing to the opacity of the skin to ultra-violet rays, vitamin D is able to be formed only on its surface or whether sufficient of the activating rays penetrate the epidermis to activate any ergosterol which may circulate in the superficial capillaries is being investigated

Dr Lucas has also been determining the transparency of skin from different parts of the body to ultra-violet light of wave-lengths varying from those of visible light to the shortest that occur in sunlight

Miss Hume, Dr. Lucas, and Miss Henderson Smith have also made some interesting observations on the beneficial action of a short daily exposure to ultra-violet light on the well-being of marmosets These animals fare badly in this country, refuse a diet suited to our climate, and rarely breed here The marmosets under investigation have been kept in a stuffy room into which no sunlight penetrates that has not passed through plate-glass They have been fed chiefly upon sweetened milk and bananas and exposed for ten minutes daily to the rays from a mercury arc lamp They have enjoyed perfect health and are extraordinarily active and have bred twice in the year The offspring were well-developed, but each time one of the twins was born dead, the other flourished

Dr T Lumsden, with the assistance of Miss A C Kohn-Speyer, has continued his work on implanted homologous malignant tumours in animals published in THE LANCET, 1926, ii , 112, and Jan 15th, 1927, p 116 Experiments with heterologous tumours are in progress

Department of Protozoology

Dr Muriel Robertson has been occupied with a morphological study of the two organisms *T ranae* and *Bodo caudatus*, with special reference to their method of division and to the nature of the parabasal body Dr H M Woodcock (Jenner Memorial Student) is continuing his work on encephalitis of rabbits of an acute inflammatory process caused by injection of erysipelas streptococci It is of interest in this connexion that failure of vaccinial response has been recently reported on rabbit skin which has been exposed to X ray and ultra-violet radiation

Dr Emerson Megrail (Western Reserve University, Cleveland, Ohio) has commenced a series of experiments to test the filterability of avian molluscum through porcelain and kieselguhr filters and collodion membranes

Dr Arkwright has continued his study of variation of the virulence and antigenic structure of bacteria Latterly his observations have been more particularly concerned with *B typhosus* and *B paratyphosus* A and their antigenic constituents

He has studied the properties of the two main kinds of antigen in the coli-typhoid group of bacteria—namely, the heat-labile and the heat-stable at 100° C, concluding that virulence and value as a vaccine are both related to the content of the heat-stable antigen That this antigen is the constituent which gives efficacy to a vaccine was supported by the finding that the vaccines after heating at 100° C had, as a rule, unimpaired prophylactic value The results with *B typhosus* vaccine were in the same direction but less distinct These observations will be extended

Dr Dorothy B Steabben has begun an experimental study of the antibodies corresponding to the heat-stable antigen in the typhoid-paratyphoid group With Dr. Arkwright's recent work on *B pseudotuberculosis rodentium* our readers are familiar (THE LANCET, Jan 1st 1927, p 13) The motility of cultures of this bacillus when grown at room temperature and their non-motility when incubated at 37° C serves to distinguish the bacillus from *B pestis* Dr Balteanu (Rockefeller Foundation Fellow) has completed his study of *V choleræ* and established the existence of variants with characteristic antigenic differences corresponding to the "H" and "O" antigens in the coli-typhoid group These two antigens have been found to be present regularly in the cultures of the normal form, contrary to the opinion of most previous workers

The action of cyanides on bacteria has been studied by Dr F M Burnet (Beit Memorial Research Fellow) who has also been engaged on a study of types of bacteriophage active against *B enteritidis* (Gaertner) with a view to their use in the treatment of infections in animals by this organism Very characteristic differences between the action of various types of phages on bacteria grown from smooth and rough forms of colony have been found

Dr G H Eagles (Beit Memorial Research Fellow) has extended his work on hæmolytic streptococci from scarlatina, erysipelas, and puerperal fever

Using commercial scarlet fever antitoxin he has found by testing in the human volunteer that all toxic filtrates, regardless of source, are neutralised Antitoxic sera produced in rabbits by strains from each source tend to show some specificity in their power of neutralisation which would probably disappear from the serum in the later stages of immunisation Immune horse serum produced by inoculation with toxin-producing strains of erysipelas show a considerable degree of neutralising value for streptococcus filtrates, including those from scarlet fever strains The possibilities of using intracutaneous tests in goats to avoid the use of human volunteers has been investigated. This has not proved a satisfactory method owing to the high susceptibility of these animals to horse serum An attempt is, therefore, being made to produce an antitoxic scarlatinal goat serum When this is ready it is hoped to come to a definite conclusion regarding the goat as a test animal

Dr H L Schutze has commenced investigations of the pasteurella group of bacteria and of the oxygen requirements of *B pestis*, and has concluded his joint work with Dr S S Zilva on the effect of diet upon the course of tuberculosis in animals

Guinea-pigs *living on a diet restricted* in quantity were found to be considerably less resistant to the progress of a tuberculous infection than normally fed controls Experiments on rats produced *no evidence* of a beneficial effect of sodium chaulmoograte as shown by the course of the development of tuberculous tumours in these animals On the other hand, there was some evidence for assuming that a large excess of cod-liver oil, as well as irradiation with ultra-violet light, did inhibit the formation of such tuberculous tumours The leucocytosis often observed under these two forms of treatment does not seem to be the only agent in this inhibition, if it is concerned with it at all

Mr Bruce White, under a grant from the Medical Research Council, has undertaken serological studies of the salmonella and dysentery groups of bacilli, and is working on the classification of intestinal bacilli along new lines

Dr D Kalic (Rockefeller Foundation Fellow) has investigated the typing of dysentery bacilli

Major J H Horne, I M S, has been investigating the distribution and method of spread of furunculosis in trout, on behalf of the Kennet Valley Fisheries Association

Department of Biochemistry

The reaction which occurs between sugar and phosphate in the course of alcoholic fermentation has been investigated quantitatively by Prof. Harden and Lord Henley, with special reference to the quantities of the mono- and di-phosphoric esters produced The work commenced last year by Miss Edna C Smith on the conversion of starch into cane-sugar, when potatoes are stored at 0° C, has been continued Another aspect of the same general problem is being attacked by Miss M J Macfarlane, who has commenced an investigation on the function of phosphates in bacterial fermentations to ascertain whether the breakdown of the sugars by these organisms is effected in a similar way to that produced by yeast

The chemical constitution of hexosemonophosphate and hexosediphosphate has been studied by Mr W T J Morgan (Grocers' Company Research student) He has also, in collaboration with Mr H P Marks at the National Institute for Medical Research, investigated the effect of these substances on rabbits and mice suffering from hypoglycæmia as a result of the administration of insulin No alleviation following administration has been observed

The phosphoric esters which occur in the blood and other animal tissues and the enzymes by which they are synthesised and hydrolysed in the body have been the subject of Dr R Robison's work In collaboration with Dr M Martland, he has made an extended study of the properties of the bone enzyme (phosphoric-esterase) and the results are now being prepared for publication The conditions of calcification in vitro have *also* engaged his *attention* Continuing his chemical investigations of the antiscorbutic factor, Dr Zilva has succeeded in improving the methods for fractionation of this vitamin

Antiscorbutic tests have been carried out on the duplicate sample of stored lemon juice taken out by the *William Scoresby* to the Arctic circle last year No appreciable loss in activity could be detected after 12 months' storage Systematically collected whale liver received from Dr Kemp of the *Discovery* expedition has been tested by Dr Zilva for its content of vitamins A and D In collaboration with Miss Soames and Captain J Golding of the National Institute for Research in Dairying, Dr Zilva has found that by adding cod-liver oil to the diet of the cow, the butter acquires enhanced vitamin D and vitamin A activity, whilst addition of green fodder leads only to improvement in the vitamin A content This investigation is being extended further and clinical experiments are being conducted by Dr Helen Mackay

Dr Smedley MacLean and Mr C G Daubney have studied the synthesis of fats sterols, and lipins by vegetable organisms

Department of Experimental Pathology

Prof C J Martin and Dr Elizabeth Lepper have continued to study the aberrations of the colorimetric method of determining pH caused by the presence of various substances Their results explain some of the contradictory results obtained by previous observers when using neutral red to determine the reaction of sera Dr E Lepper and Dr M Martland have made observations on the alterations produced in the hydrogen-ion *concentration of* the blood during forced breathing, which at the rate of 40 per minute increases the pH of the blood 0 2 short but violent exercise lowers the pH 0 1 or more These and other experiments on the variation o the alkalinity

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Trade Disputes Bill Labour Criticism of Medical Profession

On Monday, May 23rd, the House considered in Committee the Trade Disputes and Trade Unions Bill

On Clause 3 (which deals with the prevention of intimidation),

Sir H. Slesser said that there had been cases in which the British Medical Association had told doctors that if they took salaries lower than a certain rate at infirmaries no other doctor would be allowed to consult with them There was the case of Pratt v British Medical Association in which the British Medical Association for telling doctors that they might not consult with Dr Pratt at Coventry were fined £1000 or £2000 in damages Case after case of professional coercion had occurred, and if the Government were really so apprehensive of intimidation and coercion of all kinds, so sensitive about the mind of man being coerced by any external power, if they once departed from what he (Sir H Slesser) thought was the salutary principle of limiting the application of the Statute to preventing violence and threats of violence, he asked why should they stop at the working man? There were thousands of private employers who would welcome a provision which would protect them against the tyranny of employers' combines

Mr Macquisten said he did not understand the morale of picketing at all If he personally were picketed it would take a good big crowd of his fellow lawyers to carry it out with any success (Hon Members · "What about doctors?") It was all very well to talk about the doctors He was quite in agreement with hon Members that doctors had far too much power He thought that the British Medical Association was the most tyrannical trade-union the country possessed, and he would be delighted to see some clause introduced which would prevent these trade rings from victimising the whole community They would have to be dealt with some time or other

Mr Lawson said that he thought this clause was not only an injustice to the great mass of the workers, it was not only an example of class vindictiveness, but it was the most perfect piece of hypocrisy that had even been brought before the House What they were doing was to punish workmen for doing certain things which everyone in the House knew were done by every class and profession in the country Dr Vernon Davies, who was a member of the medical profession, had asked him (Mr Lawson) what he thought of the recent speech of Mr Spencer He had replied · "What would happen to him if he had been a doctor instead of a miner, and if the British Medical Association instead of the Miners' Federation had been dealing with him?" He would have been driven out of the medical profession There was a celebrated case which commanded the interest of the whole of the press and the whole British public and in spite of the fact that it was universally agreed that Dr Axham was intimidated, the British Medical Association not only carried on its work in regard to him but did it with legal authority In the mining areas they had not always the kind of medical service which they considered good enough, and they had brought in doctors They had given them infinitely better salaries than they were getting elsewhere; they had given them better instruments and medicine, but in spite of that he did not know a single case where the British Medical Association had not stepped in and used threats to prevent those doctors practising under those conditions

Dr Vernon Davies Do I understand the hon Member to say that the British Medical Association have definitely threatened these men or that they have simply offered advice to them not to undertake the work?

Mr Lawson replied that these professional men had been "advised" They had been brought down to meet representatives of the British Medical Association in the country They had put their case and defended themselves, and there was not a single case where they had not been driven out and intimidated

Dr Vernon Davies said that Mr Lawson seemed to be suffering under some slight misapprehension in his remarks concerning the British Medical Association The British Medical Association was not a trade-union It was a voluntary combination of a certain number of medical men, but there was no compulsion upon any man to join, and any man who did join was not compelled to obey their rules and regulations He had been a member of the Association ever since he went into practice, and as often as not he had been opposed to their policy In the House he had voted against their policy on Committee, and yet he had not been penalised in any shape or form, threatened or interfered with. He had given his point of view and said that as he believed they were wrong he should vote against them, and he had done so and had not suffered Cases were mentioned where the British Medical Association had interfered with certain appointments All that the British Medical Association did was this They said "We are an association of medical men out to protect the interests of the medical men and the public We think a certain job is worth a certain amount of money. This particular society or company is advertising a job at a rate of remuneration which we think is too low. If you accept it you will be very foolish, because if you stick out you can get more." Suppose a man took it, nothing was done to him All that the British Medical Association did was to say "You are satisfied with a lower rate, we cannot interfere, we cannot penalise you, and we cannot turn you out of the Association, nor can we advise anybody to have nothing to do with you"

Mr Lawson They drive him out

Dr Vernon Davies Not at all, that is where hon Members make a mistake All that the British Medical Association do is to say "You are fools if you are prepared to work for a lesser wage," but they cannot and do not penalise that man in any shape or form

Colonel Watts-Morgan asked Dr Davies to take it from him that he could give him a case of four doctors who had accepted appointments and had been boycotted by all the medical men in the district, who had refused their assistance in operations and in cases in hospitals If that was not intimidation, heaven knew what intimidation was!

Dr Davies said that he was referring to the British Medical Association It might be that the local doctors considered that a man who accepted this appointment was doing what would bring down the rates of remuneration, and they might say "We do not approve and, socially, we will not meet you." But, professionally, they were bound to meet him If any doctor refused to assist his professional brethren who might have any consultation he would not secure the backing of the British Medical Association, *or of any* medical man

Colonel Watts-Morgan I am quite prepared to give the hon Member the names so that he can *prove my statement*

HOUSE OF COMMONS

Wednesday, May 18th

Polluted Milk

Mr Buxton asked the Minister of Health (1) whether he was aware that medical officers of health in certain areas had given public advice against the consumption of liquid milk by infants, on the grounds of impurity, in their administrative area, and, in view of this fact, what further steps he proposed to promote a clean supply; and (2) whether, in view of the circular to the local authorities discouraging them from applying too zealously the Milk and Dairies Order 1926, what alternative steps he was taking to safeguard the public from the supply of polluted milk.—Sir Kingsley Wood replied · My right hon friend's attention has not been drawn to any recent instance of public advice being given by medical officers of health against the consumption of liquid milk by infants The right hon gentleman has not accurately presented the *purport* of the circular to local authorities as to the Milk and Dairies Order The circular emphasised the importance of insisting on cleanliness in milk production, and if the statutory requirements are observed and the Order is administered as suggested, my right hon. *friend* does not think that further measures should prove to be necessary.

Mr Buxton · Is the Parliamentary Secretary aware that in the House of Lords Lord Bledisloe alluded to the occurrence of medical advice of this character quite recently, and can he assure the House that the Minister of Health will resist any essential modification of the provisions of this Order?

Sir Kingsley Wood · I have no knowledge of the first statement of the right hon. gentleman. As regards the second that is, of course, a purely hypothetical question which I am not in a position to answer So far as the Order is concerned the views of my right hon. friend are represented in the circular which he circulated on Jan. 20th last

Mr Paling . May I ask whether the Order discouraging *local authorities* from carrying out these provisions was sent out as a result of protests of agriculturists on the Government side of the House?

Sir Kingsley Wood The hon. Member has no right to characterise the circular in that way There is no reference in the circular to any such statement

Commander Williams · Is it not a fact that the real danger is not from British milk, but from imported milk?

Mr Day · Has the Parliamentary Secretary seen the report of the medical officer of health for Woking, and if not, will he have that report looked at?

Sir Kingsley Wood · I am not aware of that report

Mr A. V Alexander: As it is impossible to get clean milk for a large number of the working classes without getting dried milk will the Minister of Health consider

It is characterised histologically by small-celled perivascular infiltration and the occurrence of focal lesions, constituted in part by large epithelioid cells Clumps of the small bodies, thought by some to be parasites, and called "*Encephalitozoa*" are found either associated with these zones or separate from them The disease occurs "spontaneously," at times in the form of an epizootic, both in America and on the continent, but very seldom in this country Kling, of Stockholm, considers that he *has produced the condition by inoculating rabbits* with material from cases of human encephalitis Dr Woodcock, working with material kindly sent by Prof Kling, has succeeded in obtaining infection in 20 per cent of the animals so far inoculated In these cases the "*Encephalitozoon,*" bodies found are identical with those previously found in a stock rabbit, when these bodies occur, well-marked lesions are also present, but characteristic lesions may occur without the bodies being found Both Kling and Woodcock are of opinion that these elements are not microsporidian parasites *and regard them as cell reaction products*

Dr Woodcock is also investigating the pathology of sarcocystic disease of the mouse

Department for the Study and Preparation of Antitoxic Sera.

Work on the standardisation of antidysentery serum has been carried on throughout the past year The *relation of "roughness" and "smoothness" of* streptococcus cultures to their virulence and hæmolytic power has also been studied in this department

Other investigations include those into the endotoxin of the plague bacillus and the production of diphtheria toxin An attempt has been made to combat pneumococcal infection amongst guinea-pigs by giving the animals a more generous ration of green food

Until Christmas the health of the stock remained exceptionally good, but during the early part of the present year a number of litters were born dead and some of the young died soon after birth The antenatal mortality and the deaths among the very young were found to be due to the pneumococcus Whereas formerly the mothers of the infected young *often died about a* week after parturition with an acute *pneumococcal* infection it *is* now exceptional for them to die in this period, they are in fact healthy carriers of the disease, which they transmit to their young It is suggested that some essential factor is missing in the nutrition of the fœtus by the mother's blood, a constituent which is gradually exhausted during the first half of the winter, and that the absence of this substance is less harmful to the parent than to the young It is natural to think that the missing element is vitamin D and it is proposed, during next winter, *to* artificially illuminate some of the breeding stock, with a suitable *control, in order to test the validity of this hypothesis*

The accidental production of pneumococcal endocarditis in a horse that was being actively immunised against a type 1 strain of pneumococcus led to the recovery from the blood of a strain of pneumococcus which proved to be non-virulent for mice Experimental work with this strain is in progress in the attempt to throw light on the pathogeny of acute and chronic endocarditis in man

In the department for the study and preparation of antivariolous vaccine Dr A B Green has made further *attempts to cultivate the vaccine virus artificially*, and has continued his work on the raising of the virulence of vaccine The recent progress of foot-and-mouth disease research *was recorded in the second progress* report of the Committee published early in 1927 (THE LANCET, March 5th, 1927, p 499)

General and Financial

A request from the Empire Marketing Board to the Medical Research Council for advice as to the best means of promoting an investigation into methods of preserving Empire fruits, vegetables, and dairy products in order to preserve their vitamins was, in November last, referred to the Accessory Food Factors' Committee, appointed jointly by the Institute and the Medical Research Council The Committee suggested that such an investigation be carried out at the Institute The Committee's recommendations were approved by the Medical Research Council and the Empire Marketing Board, and the Governing Body of the Institute The investigation will occupy five years and is being carried out in the Biochemical Department under the general supervision of Prof Harden. Dr S S Zilva will be in charge of the investigation and the cost of the inquiry will be borne by the Empire Marketing Board The accounts and balance sheet for the year ended Dec 31st, 1926, show balances to the credit of the pension fund of £23,041, the sinking fund of £15,258, and the capital fund of £506,792, the latter figure including the credit balance of £8481 from the year's working Receipts from the sales of the Institute's products and investigation fees show a net decrease of £4131 compared with the previous year—viz, antivariolous vaccine decrease £2156, antitoxins and sera decrease £1622, bacterial vaccines decrease £1160, investigation and diagnosis fees increase £808 The total expenditure for the year was £38,086, against £36,502 in 1925 Rent, rates, taxes, and insurance, repairs and renewals (including the installation of electricity at the serum department), and library expenses show an increase, and gas, water, and fuel, electric light and power, serum and calf laboratories expenses and animals a decrease compared with last year

The Services.

ROYAL NAVAL MEDICAL SERVICE

Surg Lt -Comdrs: O J M Kerrigan to *Impregnable*, J J Carroll to *Tamar*, addl, and for Hong-Kong Dockyard

ROYAL ARMY MEDICAL CORPS

Capts to be Majs C H G Penny (Prov), and H E P Yorke

Lt (on prob) H McVicker is confirmed in his rank

W F *Cooper to be Lt (on prob)*

J D Dillon to be Temp Lt

RESERVE OF OFFICERS

Col H G Martin, late R A M C, having attained the age limit of liability to recall, ceases to belong to the Res of Off

SUPPLEMENTARY RESERVE OF OFFICERS

Lt N M Maclennan resigns his commn

TERRITORIAL ARMY

Capt R R Evans, R A M C, to be Divl Adjt, 55th (W Lan) Div, vice Capt B L Davis, vacated

Lt L C F Chevens resigns his commn

TERRITORIAL ARMY RESERVE OF OFFICERS

Lt -Col A W Moore from the Active List, to be Lt -Col

Maj J Wallace, from the Active List, to be Maj

ROYAL AIR FORCE

Squad-Leader R S Topham is placed on the retired list at his own request

Flight Lt H H R Bayley relinquishes his temp comm on completion of service

INDIAN MEDICAL SERVICE

Capts Rustam Merwan Kharegat and J C Pyper to be Majs

Lt J C Drummond (prov) to be Capt

The Admiralty invites applications for short service commissions as surgeon-lieutenant and also as dental officers *Particulars may be found in our advertisement* columns

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GLASGOW DENTAL HOSPITAL —The *Governors* of the Incorporated Dental Hospital, Glasgow, have obtained a site for a new building in Renfrew-street The intention is to erect and equip "the finest dental institution in the kingdom," and an appeal for £90,000 is about to be made

PROPOSED EXTENSIONS OF KING'S COLLEGE HOSPITAL.—*At the annual festival dinner* last week, at which the Duke of Connaught presided, it was stated that the plans for extension include the building of a block for 60 paying patients The 16 additional casualty beds, towards which King Edward's Fund makes a special grant, expiring next year, are always full, and cost a minimum of £3500 a year. The casualty cases last year numbered 16,000

Royal Marines during the years 1921 to 1925 for organic heart disease were as follows 1921, 111, 1922, 67, 1923, 23, 1924, 28, and 1925, 34 No figures are available for 1920 and those for 1926 are not yet available It is not known how many of these invalidings were the result of rheumatism and to ascertain the number would involve a considerable expenditure of time and labour, which would not appear to be justified

First-aid in Road Accidents

Dr VERNON DAVIES asked the Minister of Transport what steps were taken by his department for the provision of efficient first-aid on the roads of this country, and if he was satisfied, bearing in mind the increase of road accidents due to motor and other traffic, that the provision made was adequate —Colonel W ASHLEY replied I have no powers to provide first-aid outfits on the roads of the country

International Congress on Hydrophobia

Mr DAY asked the Minister of Health the names of our representatives who attended the International Congress on Hydrophobia which was summoned by the health section of the League of Nations held at Paris, together with the cost to Great Britain —Mr CHAMBERLAIN replied The Ministry of Agriculture and Fisheries was represented by Dr W H Andrews, the Medical Research Council by Captain S R Douglas, and the Ministry of Health by Dr W M Scott In addition, six representatives attended from British institutes overseas at which anti-rabic work is specially important. The only expenses entailed to the public funds were travelling and subsistence allowances on the ordinary scale for the three delegates from Great Britain

Small-pox at Hendon and Golders Green

Mr DAY asked the Minister of Health whether he could furnish the following particulars of the small-pox cases removed to hospital from Hendon to Golders Green, the sex and age of each patient, the vaccinal condition of the fatal and non-fatal cases, whether there were any special circumstances connected with the fatal cases that contributed to the fatal result, and whether the infection was originally contracted abroad —Mr CHAMBERLAIN replied Nine patients, whose homes were in the urban district of Hendon, were removed to hospital, one male and eight females One patient was eight days old and the others were aged 8, 15, 16, 21, 23, 37, 42, and 47 years respectively There were five fatal cases and I am informed that at the time of infection four of these were unvaccinated and one vaccinated Of the non-fatal cases, two were unvaccinated and two vaccinated at the time of infection The three vaccinated cases were aged 23, 42, and 47 respectively, and were all vaccinated only in infancy As regards the last part of the question, I am not aware of any special circumstances I am informed that the source of infection has not been traced

TUESDAY, MAY 24TH

Funds of the Dental Board

Mr HORE-BELISHA asked the Minister of Health how much the Dental Board had accumulated in cash and invested in securities, what it was proposed to do with this money, and what steps were being taken by the Board for the professional benefit of the 1921 dentists who supplied a large proportion of this money —Sir KINGSLEY WOOD replied As regards the first part of the question, I would refer the hon Member to the accounts of the Board which were presented to Parliament in March The real balance, including the invested general reserve fund, was £20,750 My right hon friend is informed that the main items of the Board's expenditure are grants in aid of dental schools, bursaries to dental students of limited means, and research As regards the last part of the question, the Board are not under any statutory obligation to spend their money for the benefit of any particular class, but my right hon friend is informed that since the formation of the Board bursaries awarded to sons of " dentists 1921 " have amounted to approximately £10,000 and the sum of £3,850 has been spent on lectures and demonstrations for the benefit of this class of dentists In addition, over £10,000 has been allocated to dental health propaganda and £23,000 to research " Dentists 1921 " participate in the benefit derived from expenditure in these two directions in proportion to their numbers

Vitamin Research

Mr DAY asked the Minister of Health if his attention had been drawn to a process discovered in Germany for manufacturing synthetic vitamins, and whether any research work was being undertaken by the departments or laboratories under his control to produce vitamins of this quality in Great Britain —Mr CHAMBERLAIN replied The investigations to which I believe the hon Member intends to refer are following the lines of work of fundamental importance done recently in the National Institute for Medical Research, at Hampstead, where the production of a vitamin of intense potency has been effected by the action of light upon a known chemical substance in pure form I am glad to be able to say that this country continues to take the leading position in vitamin research which it has held throughout I am informed that much important work upon the various vitamins, including that already mentioned, is in progress in various laboratories, and in large part with the support of public funds administered by the Medical Research Council

Toxic Action of Silica in Water

Mr MORRIS asked the Minister of Health if he was aware that local authorities were proposing to adopt the process of adding silicate of soda to soft water in order to prevent the solvent action of the water on lead pipes, whether this process had been investigated by the Ministry of Health, and whether, in view of the toxic action of silica under certain conditions, he would order that the use of this process be discontinued —Sir KINGSLEY WOOD replied My right hon friend is aware that this process has been adopted in a few districts, mainly on an experimental scale The quantity of silicate of soda used is so small that the proportion in the treated water is much less than that contained in many natural waters used for domestic supplies The results of the treatment are being carefully watched and, upon the information so far available, there appears to be no reason to apprehend any danger to health or any diminution in the wholesomeness of the water

Civil Population and Poison Gas

Mr CECIL WILSON asked the Prime Minister whether any decision had been come to as to the methods to be taken for the protection of the civil population against poison gas, and, if not, when such decision might be expected —*Mr BALDWIN replied* The problem of the protection of the civil population against gas attack is being closely studied both in its technical and its non-technical aspects I cannot at the present time particularise the steps taken further than to say that they are directed to securing in the first place the provision of an adequate personnel suitably equipped and trained in protective measures, and secondly, the dissemination at the proper time of full information in regard to the best methods of self-protection

Obituary.

WAREN TAY, F R C S ENG, L S A,

CONSULTING SURGEON TO THE LONDON HOSPITAL

WE regret to announce the death of Mr Waren Tay, one of the oldest Fellows of the Royal College of Surgeons of England, which occurred on May 15th at his house in Croydon He was in his eighty-fourth year and had lived much in retirement recently

Waren Tay received his medical education at the London Hospital and qualified as M R C S in 1866, proceeding to the Fellowship three years later After holding the usual resident appointments, he became assistant surgeon and ophthalmologist to the London Hospital in 1869, and was promoted to charge of beds seven years later He was an untiring hospital officer, giving his time without stint to the " London," and being at the same time surgeon to the North-Eastern Hospital for Children, the Hospital for Diseases of the Skin, Blackfriars, and the Royal London Ophthalmic Hospital He belonged to a simpler age when it was possible for the general surgeon to be at the same time a special authority in separate directions, some of which were actually being split into further departments during his lifetime During 20 years he worked largely in association with one of his immediate seniors, Jonathan Hutchinson, and like him combined with general surgery the pursuit of ophthalmology and dermatology, adding the third subject of pediatrics He wrote on all the subjects in which he specialised, although no big book came from his pen, nor was he a prominent contributor to any of the big systems of surgery or therapeutics He translated one of the volumes of Hebra's Dermatology for the New Sydenham Society, but his writings were largely confined to hospital reports, a certain number of clinical records in the medical journals, and the proceedings of learned societies whether it is not possible to get compulsory circulation of bottled and pasteurised milk ?

Sir KINGSLEY WOOD · That does not arise out of this question

Sir W LANE-MITCHELL May I ask if it is not the case that 90 per cent of the milk supplied in London now is pasteurised and bottled under the regulations of the Ministry of Health, so that the London public is fully protected ?

No answer was given

Small-pox in Scotland

Mr HARRISON asked the Secretary of State for Scotland the total number of cases of small-pox notified in Scotland for the year ending April 2nd, 1927, or nearest convenient date, and the names of the localities affected —Sir JOHN GILMOUR replied For the year ended April 2nd, 1927, there were notified in Scotland 61 cases of small-pox The only locality affected is Dundee

Insurance Act Benefits

Mr HARNEY asked the Minister of Health what was the approximate total amount paid to the insured population under the National Health Insurance Act from the date of its inception till now under the following heads sickness benefit, disablement benefit, maternity benefit, and additional treatment benefits, respectively, what was the approximate total amount of contributions received under the Act from each of the following employed contributor, employer, and the State, respectively, and what was the number of approved societies operating under the Act of Dec 31st, 1926 —Mr CHAMBERLAIN replied The particulars asked for under the National Health Insurance Act from the date of its inception under Dec 31st, 1926, are given in round figures for England and Wales in the following statement Total amount paid sickness benefit, £90,000,000, disablement benefit, £31,000,000, maternity benefit, £18,000,000, additional treatment benefits, £4,500,000 The approximate total amount of contributions received under the Act from employed contributors was £143,000,000, employers, £136,000,000, the State, £94,000,000 The number of approved societies with head offices in England and Wales at Dec 31st, 1926, was 926, including 27 societies with approximately 6440 branches

Vaccination Bill

Mr GROVES presented a Bill to amend the law relating to compulsory vaccination which was read a first time

THURSDAY, MAY 19TH

First-aid in Street Accidents

Dr VERNON DAVIES asked the Secretary of State for the Home Department what measures were taken in the metropolitan police district to see that prompt and efficient first-aid was available in the case of street accidents, and if he was satisfied that these measures were sufficient, bearing in mind the probability of a steady increase in these accidents owing to the rapid development of motor transport —Sir W JOYNSON-HICKS replied The main responsibility for the provision of first-aid (apart from facilities for removal to hospital) in case of street accidents must obviously rest with the police, and the importance of first-aid training is fully recognised Under present arrangements every recruit entering the Metropolitan Police receives instruction in first-aid and ambulance drill and is required to secure a certificate of proficiency in first-aid before his appointment as a constable can be confirmed At the present time about 90 per cent of the force possess certificates of competency, and I am not aware of any reason for thinking that the existing arrangements are in any respect insufficient

Dr DAVIES Can my right hon friend say whether the provision of this first-aid has necessitated any increase in the force itself ?

Sir W JOYNSON-HICKS It is quite impossible to say exactly where an increase in the force arises There may be a few more men, but I think on the whole there has been no actual increase because of this

Mr HARRIS Is this the most satisfactory way of dealing with this matter ? Would it not be better to deal with it through the improved motor ambulance service supplied by the London County Council ?

Sir W JOYNSON-HICKS I should be very glad if the London County Council would assist me

Children and Vaccination

Sir JOHN POWER asked the Minister of Health the number of children born in England and Wales last year, and how many of them were vaccinated —Mr CHAMBERLAIN replied The number of births registered in England and Wales last year was 694,563, but I am not at present in a position to say how many of these children have been vaccinated The corresponding figures for 1925 were births, 710,400, successfully vaccinated, 311,325

Cost of Small-pox Treatment

Mr HARRISON asked the Minister of Health the estimated cost of the treatment of the 12,922 cases of small pox notified in England and Wales during the year ending April 2nd, 1927, and the percentage of that cost borne by the Exchequer and local authorities respectively —Mr CHAMBERLAIN replied These particulars are not available, but no part of the cost of the treatment of small-pox cases falls on the Exchequer except in the case of patients arriving in this country suffering from the disease who are isolated and treated by the port sanitary authorities In such cases 50 per cent of the cost is borne by the Exchequer

Cost of Public Vaccination

Mr HARRISON asked the Minister of Health what was the estimated cost of public vaccination for small-pox during the year ending April 2nd, 1927, including the cost of preparing the vaccine —Mr CHAMBERLAIN replied The cost of public vaccination, including the cost of vaccine lymph issued from the Government Lymph Establishment, was approximately £175,000 for the financial year 1925-26, which is the last year for which particulars are at present available

Post-vaccinal Encephalitis

Mr BRIANT asked the Minister of Health when the report of the committee appointed in February, 1926, to consider the question of post-vaccinal encephalitis would be issued —Mr CHAMBERLAIN replied If the hon Member refers to the committee appointed to inquire and report, amongst other things, on the practical methods which are available in the light of modern knowledge to diminish or remove any risks which may result from vaccination, the answer is that I am not yet in a position to say when the report will be issued

Substitutes for Ethyl Alcohol

Lieut -Colonel HENEAGE asked the Secretary to the Treasury whether an investigation had been made into the subject of substitutes for ethyl alcohol, and, if so, whether he is in a position to state the results —Mr R MCNEILL replied Yes, Sir My right hon friend arranged for an investigation into this subject by the departments concerned, and as a result the following conclusions have been reached (1) Purified methyl alcohol will remain within the scope of the spirit duty But no duty will be payable so far as it is used for industrial purposes and the official supervision of manufacture and duty-free use will be reduced to the minimum consistent with the safety of the revenue Moreover, provision has been made in Clause 11 (1) of the Finance Bill for the extension to methyl alcohol of an appropriate Excise allowance on the lines of that now payable on ethyl alcohol manufactured in this country and used duty-free for industrial purposes, in order to compensate for the expense involved in conforming to Excise restrictions on manufacture (2) As at present advised, it is not proposed to bring any other substance, which may be used as a substitute for ethyl alcohol, within the scope of the spirit duty It is, however, proposed in Clause 15 of the Finance Bill to take power to collect information as to the importation, manufacture, distribution, and use of the higher alcohols and to require manufacturers of these substances to register with the Customs and Excise Department

MONDAY, MAY 23RD

Small-pox at Hackney Wick

Captain GARRO-JONES asked the Minister of Health whether it had been found possible to trace the source of infection of the case of small-pox which had occurred at Hackney Wick, whether he was satisfied that local authorities had all useful powers to safeguard the population in such cases, and on what date, in the absence of further cases, the contacts and other inhabitants of Hackney Wick would be free from danger of infection from the case mentioned —Sir KINGSLEY WOOD replied The source of infection of this case has not yet been traced My right hon friend is of opinion that the local authorities have all necessary powers to safeguard the population in such cases if adequate use is made by the public of the facilities provided for free vaccination As regards the last part of the question, as further cases have occurred in this area, my right hon friend is not in a position to say when the inhabitants will be free from the danger of infection

Heart Disease in the Navy

Dr VERNON DAVIES asked the First Lord of the Admiralty if any youths under 21 years of age had been invalided out of the Navy during the past seven years for which statistics were available for heart disease, the result of rheumatism during their period of service, and, if so, how many — Lieut -Colonel HEADLAM (Parliamentary Secretary to the Admiralty) replied The numbers of officers and men under 21 years of age invalided from the Royal Navy and

UNIVERSITY OF LONDON —At a meeting of the Senate held on May 18th it was reported that the semi-general election of members of the Senate for the period 1927–31 had resulted in the following appointments amongst others By Convocation Mr W G Spencer, M S ; by the Royal College of Physicians of London, Dr J Fawcett , by the Royal College of Surgeons of England, Mr V. Warren Low, F R C S ; by the Faculty of Medicine, Lord Dawson of Penn, M D , and Mr H L Eason, M S

Mr Duncan MacCallum Blair was appointed as from August 1st, 1927, to the University Chair of Anatomy tenable at King s College He received his medical education in the University of Glasgow, where he was awarded 20 first-class certificates of merit in the various classes of the medical course and obtained the M B Ch B degrees with honours in October 1919 He served with the Royal Naval Volunteer Reserve for two years during the war In 1919 he was appointed demonstrator in the anatomy department of Glasgow University, and in March, 1922 senior demonstrator and lecturer since October, 1924, he has been lecturer in regional anatomy

Dr G S Wilson was appointed as from Oct 1st 1927, to the University Readership in Bacteriology and Immunology tenable at the London School of Hygiene and Tropical Medicine He was educated at Epsom College, King's College, London, and Charing Cross Hospital In 1916 he qualified as M R C S Eng and graduated M B , B S Lond , with distinction in medicine, surgery, midwifery, and pathology, and the gold medal in 1919 he obtained the M D Lond degree (pathology) and in 1920 became M R C P and took the D P H He gained various prizes at Charing Cross Hospital and the governors' clinical gold medal He served in the Royal Army Medical Corps from 1916–20 (during 1917 and 1918 in India) In 1919 he was appointed specialist in bacteriology at the Royal Army Medical College , in 1921 assistant in bacteriology under the Medical Research Council, and in 1923 lecturer in bacteriology in the University of Manchester Since 1925 he has been assistant director of the Public Health Laboratory, Manchester Dr Wilson has published a number of papers in THE LANCET and other journals; the latest of them will be found on p 1123 of this issue

The title of Emeritus Professor of Ophthalmic Medicine and Surgery at University College was conferred on Mr Percy Flemming

The Dunn Exhibitions in Anatomy and Physiology were awarded to Mr K M Robertson, an internal student, of St Thomas's Hospital Medical School

The following resolution was passed —

That Sir William Collins be informed that the Senate have learned with great regret of his decision not to seek reappointment on the termination of his period of office as one of the representatives of the London County Council on their body, and that they desire to place on record their high appreciation of the distinguished services which for so many years he has rendered to the University

With reference to the anonymous offer, already announced, of £10 000 towards the establishment of a chair of dietetics the Vice-Chancellor stated that Messrs A Wander, Ltd , had now intimated their desire to contribute a similar sum to the same object

The Vice-Chancellor announced that he had received from a donor, who desires to remain anonymous, an offer of £250 as a contribution towards any preliminary expenses involved in the preparation of a comprehensive plan for the development of the Bloomsbury site

University College, University of London —Three public lectures on Experimental Vital Statistics will be given at University College Gower-street, W C on June 8th 9th and 10th by Prof Raymond Pearl, director of the Institute for Biological Research, Johns Hopkins Hospital, Baltimore

RONTGEN SOCIETY —The twenty-eighth annual meeting of the American Rontgen Ray Society will be held in Montreal from Sept 20th to 23rd, under the presidency of Dr A Howard Pirie of Montreal This is the first occasion on which the Society has met outside the United States and, to acknowledge the honour paid to a British radiologist by his election to the presidency of the Society, a party of radiologists from this country is going to Montreal in September Dr G W C Kaye has been invited by the Society to give the Caldwell lecture

SOCIETY FOR THE STUDY OF INEBRIETY —At a meeting of this society to be held in the rooms of the Medical Society of London, 11, Chandos-street Cavendish-square W on Tuesday July 12th, at 4 P M , a short presidential address on the aims and work of the society will be given by Sir Arthur Newsholme, after which Dr Godfrey Carter will open a discussion on Drunkenness and its Detection particularly in regard to Blood and Urine Alcoholic Concentration as a Guide to Intoxication.

ROYAL SOCIETY OF MEDICINE —The house and library of this Society will be closed on Saturday, June 4th, and Monday, June 6th

Lieut -Colonel James Cran, P M O . British Honduras, has been appointed an official member of the Legislative Council of the Colony.

TYPHOID FEVER IN MONTREAL —It is stated that there have been nearly 1400 new cases of typhoid fever in Montreal since May 1st

Major John Penberthy, who was for many years professor of pathology and of medicine at the Royal Veterinary College, and was President of the Royal College of Veterinary Surgeons in 1897, died suddenly at Bath on May 23rd

ST BARTHOLOMEW'S HOSPITAL "FLEET-STREET WEEK"—The sum of £33,377 was raised by the "Fleet-street Week" which was held last October This sum includes all receipts from May 25th, 1926, to March 14th last The expenses were £1,061

POPLAR HOSPITAL FOR ACCIDENTS —A new children's ward was opened last week Sir Joseph Broodbank the Vice-Chancellor of the hospital, stated that its erection was necessitated by the increase of accidents to children caused by the growth of road traffic

INVALID CHILDREN'S AID ASSOCIATION —Lord Burnham presided last week at the annual meeting held at Lord Howard de Walden's house in Belgrave-square Last year over £84,000 was raised 18,000 cases were helped, and 7500 children sent away The parents contributed over £15 000 towards the cost of treating their children.

LONDON ROYAL FREE HOSPITAL —A fair in aid of the Centenary Fund of the hospital will be held on June 10th and 11th at the London School of Medicine for Women, Hunter-street, W C There will be dancing, students' entertainments, and music

A HOSPITAL GARDEN FETE —The British Charities Association, on the last three days of last week, held its third annual garden fête in aid of the voluntary hospitals, at the Royal Botanical Gardens, Regent's Park The fête was opened by the Princess Royal

AN ordinary meeting of the Circle of Scientific, Technical, and Trade Journalists will be held on Wednesday next, June 1st, in the Hall of the Institute of Journalists, Tudor-street, London, E C when a discussion will be initiated at 5 P M. on the Relations between Writer and Editor in Scientific and Technical Articles, by Sir Richard A Gregory

DENTAL CLINIC FOR CHILDREN —The secretary of the British Dental Hospital informs us that a special dental clinic for children under 5 years of age has been opened at Battersea, in conjunction with the Battersea Borough Council's maternity and child welfare scheme, providing for the dental treatment of expectant and nursing mothers The dental surgeon appointed is Mr J Rhys-Herbert.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION —On Monday, May 30th, at 2 P M, at the Royal Waterloo Hospital, Dr A S Woodwark will give a lecture on diabetes, and on the same day, at the same hour, Mr W McK McCullagh will give a special clinical demonstration at the Samaritan Hospital for Women Both lecture and demonstration are free to members of the medical profession A series of demonstrations will take place during June at the Royal Eye Hospital the first will be given by Mr Letchworth on June 9th, at 3 P M From June 8th to 21st the Chelsea Hospital will hold one of its special courses on the diseases of women (Fee £5 5s) From June 8th to 29th the Central London Ophthalmic Hospital will hold an afternoon course, during which the clinical practice of the hospital will be open (Fee £3 3s) If desired an operative course can be arranged, for which the fee will be £5 5s From June 13th to 25th a course in diseases of children has been arranged in which several hospitals will take part This course will be under the direction of Dr Bernard Myers of the Children's Clinic, where some of the sessions will take place (Fee £2 2s) An afternoon course has been arranged at the Blackfriars Skin Hospital from June 20th to July 1st Special cases of interest will be shown on each Tuesday (Fee £1) The City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, will hold a special course from June 27th to July 9th , the practice of the hospital will be open to those enrolling (Fee £2 2s) Practical courses in anæsthetics and obstetrics can be arranged for by the Fellowship, which can also make arrangements for clinical assistantships in gynæcology The Fellowship also provides a general course of instruction at the associated hospitals, for which a separate programme is published Copies of all syllabuses and of the *Post-Graduate Medical Journal* are obtainable from the Secretary of the Fellowship at 1, Wimpole street, London, W 1

We are indebted to two of his friends for the following appreciation of Mr Tay as teacher and colleague —

"Tay was one of the hewers of wood and drawers of water in medicine Such men accumulate the materials with which others build He was a walking dictionary at the London in the 'nineties No one knew more than he about skin or tumours or syphilis or eyes, and he had seen more out-patients, there and at Blackfriars and Moorfields, than any living man His was a prodigious zeal for knowledge, without the desire, and perhaps without the power of exploiting it Tay owed his appointment on the staff to Jonathan Hutchinson, but Hutchinson owed very much to Tay, whose industry was ever at his call The younger surgeon was indeed overshadowed by the great clinical teacher, even it seemed at times to the weakening of his own initiative and judgment Such unconscious self-effacement, not uncommon among co-workers in science, imposes a heavy obligation on those that profit by it Later on he became senior surgeon to the hospital at the time when Hughlings Jackson was senior physician, and had to treat surgically the complicated brain cases which only Jackson at that time could diagnose Possibly Tay knew too much to be a great practitioner He considered every possibility, and knew how little surgery could do in pre-antiseptic days He lived alone, and was never married He was quietly independent in a small way, and fond of cycling out to a simple lodging on the Brighton road When a colleague pressed him to join in a holiday Tay always declined 'My landlady would be so disappointed if I did not go as usual for Whitsun ' That expresses the man "

Mr Tay lived for a long time in Finsbury-square He retired from the staff of the London Hospital in 1902, being duly elected consulting surgeon

THE LATE DR NEVILLE WOOD

Dr A F HURST writes No more useful drug has been introduced during the present century than liquid paraffin It is strange therefore that the obituary notice of Neville Wood, the first man in England to recommend it, should contain no mention of his invaluable contribution to therapeutics In 1906 he wrote a paper in the *West London Medical Journal* on the treatment of constipation by liquid paraffin, and it is only fair that his name should always be remembered in this connexion It is true that Randolph, of Philadelphia, had used it in the treatment of constipation as long ago as 1885, but its modern popularity dates from 1906, and Neville Wood told me that he had no knowledge of Randolph's work when he wrote his article. Neville Wood had also already used liquid paraffin for a long time when Adolf Schmidt, of Halle, mentioned the subject in a paper on agar-agar, though this paper appeared the year before Wood published his own experience

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DONATIONS AND BEQUESTS —By the will of the late Mr James Froane, of Gotham-street, Leicester, who left £78,364, with net personalty £78,093, the testator bequeathed £2000 to the Children's Hospital in connexion with the Leicester Royal Infirmary , £2000 to the Leicester Association for the General Welfare of the Blind , £1000 to the Leicester Guild of the Crippled, £500 to the National Lifeboat Institution , and the ultimate residue of the property (estimated at over £50,000) to the Leicester Royal Infirmary —The late Mr William Hobbs Okey, J P , of Portarlington-road, Bournemouth, left, among other bequests, £500 to the Royal Victoria and West Hants Hospital, Bournemouth , £250 to the National Sunday School Union Convalescent Home, Bournemouth , and £250 to the Victoria Home for Crippled Children, Bournemouth —By will the late Viscountess Bearsted left, among other bequests, £5000 to the Building Fund of the Jewish Maternity Home, Underwood-street, Whitechapel , £500 to the West Kent General Hospital, Maidstone , £250 each to the London Hospital and Lord Mayor Treloar's Cripples' Home , and £200 to the Hospital for Women, Soho-square, W

Medical News.

UNIVERSITY OF CAMBRIDGE.—At a Congregation on May 20th the degree of Bachelor of Medicine was conferred on the Hon C B Buckley

SOCIETY OF APOTHECARIES OF LONDON —At recent examinations the following candidates were successful in the under-mentioned subjects —

Surgery —P V Bamford, London Hosp , F W Crossley Holland, St Bart 's Hosp , P F Fanaken, St Mary's Hosp , S Goldman, London Hosp , H M de Hartog, St Mary's Hosp , G L McDermott and E H Roberts, St Bart 's Hosp , and V K Samy, Dundee

Medicine —P Brookes, London Hosp , J H Gillatt, Sheffield, A W Marsden,, Birmingham and St Thomas's Hosp , W D Neill, London Hosp , E H Roberts, St Bart 's Hosp , V K Samy, Dundee S le R Switzer, London Hosp , and T de L Walker, King's College Hosp

Forensic Medicine —T M Beattie, Leeds , P Brookes, London Hosp , J H Gillatt, Sheffield W Howard, Liverpool , A W Marsden, Birmingham and St Thomas's Hosp , E H Roberts, St Bart 's Hosp , and D D Stidston, St Mary 's Hosp

Midwifery —G Danby, Manchester , J A Fernandez, St Bart 's Hosp , A W Lassowsky Basle and Middlesex Hosp , M H Rashwan, Guy's Hosp E A Stroud, Birmingham , and L D Williams, Cardiff

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery —

P V Bamford, P Brookes, G Danby, J A Fernandez, J H Gillatt, W Howard A W Marsden, W D Neill, V K Samy, and L D Williams

ROYAL COLLEGE OF SURGEONS OF EDINBURGH — At a meeting of the College held on May 17th, Dr A Logan Turner, the President, in the chair, the 22 successful candidates, out of 44 entered, who passed the requisite examinations on Jan 7th, 1927, were admitted Fellows —

James Neilson Adam, Harold Grover Armstrong, Thomas Oswald Chenoweth, Arthur Lynton Clowes, Amos Hubert Coleman, Kenneth Alexander Gilchrist, Alexander Campbell Gillies, Prabhakar Narayan Gokhale, Norbertus David Peter de Villiers Graaff, George Milne Gray, John Fereday Hackwood, William Keith Renwick Hamilton, Brian Maurice Johns Balwant Govind Kane, John Joseph Kelly, Harry Lewis, Arthur Neil McMillan, Boddapati Tirumal Rao, Malcolm Stuart Ross, Robert Ritchie Simpson, Ahron Sourasky, and William Combe Wilson

Passed between Sept 27th and Oct 4th, 1926 Ruth Elizabeth Millar

Higher Dental Diploma —The following candidates having passed the requisite examinations received the Higher Dental Diploma William George Coventry, Clarence Victor Berry, and Edwin Priestley

The Bathgate Memorial Prize was, after a competitive Examination in Materia Medica, awarded to Chee Juay Poh and Demetrius Maurice O'Flaherty who obtained equal marks

UNIVERSITY OF BIRMINGHAM FACULTY OF MEDICINE —A lecture on Spa Treatment will be delivered on June 9th, at 4 P M , in the medical lecture theatre by Dr C W Buckley The subject will be the Action of Mineral Waters in Disorders of the Stomach and Bowels Members of the medical profession are invited to attend

OXFORD UNIVERSITY JUNIOR SCIENTIFIC CLUB — The 29th annual Boyle Lecture under the auspices of this club will be delivered on Saturday, June 4th, at 9 P M , in the hall of Balliol College by Sir Leonard Rogers, F R S , on Climate and Disease Incidence in India Forecasting Epidemics

JOURNÉES MÉDICALES DE BRUXELLES — This medical congress will be held from June 25th to 29th, under the presidency of Prof Jean Verhoogen A large number of foreign medical authorities will take part and there will be an international exhibition The Belgian railways offer reduced fares to those attending the congress, of which further particulars may be had from the secretary-general, Dr R Beckers, at 62, rue Froissart, Brussels

R A M C WAR MEMORIAL —On May 22nd, after the afternoon service, a window was dedicated in Westminster Abbey in memory of more than 7000 officers, warrant officers, non-commissioned officers, and men, who lost their lives in the late war The dedication was performed by the Dean (the Very Rev W Foxley Norris), and a guard of honour, consisting of an officer and 12 other ranks, was furnished by Regular and Territorial units of the corps Buglers sounded Last Post and Reveille and the National Anthem was sung at the end of the service The window was designed and executed in stained glass by Mr J N Comper The names it serves to commemorate are enrolled in a book to be kept in the Chapter House

Federated Malay States—Radiologist $500–25–800 a month

Foot-and-Mouth Disease Research Committee—Research O £750

Hampstead General and North West London Hospital, Haverstock-hill, N W—H S At rate of £100 Cas Surg O at Out-patient Dept At rate of £100

Hospital for Sick Children, Great Ormond-street, W C—R M O for Branch Hospital, Tadworth Court, Walton Heath, Surrey At rate of £250 Also H P and H S Each £50

Kent County Mental Hospital, Chartham, near Canterbury—Jun - Fourth Asst M O and Pathologist £350

Liphook, Hants, King George's Sanatorium—Asst M O At rate of £200

Liverpool, Walton Institution, Rice lane—Res Asst M O £200

London Hospital, E—*Gynæcological and Obstetric Dept*—Res First Asst £300

Manchester, Ancoats Hospital—H S At rate of £100

Manchester City Education Committee—Two Asst Sch M O 's £600

Manchester, Royal Manchester Children's Hosp—Sen M O £300

Middlesbrough, North Riding Infirmary—Hon Anæsthetist.

Middlesex Hospital, Ferens Institute of Otolaryngology—Bernhard Baron Research Studentship £300

Mildmay Mission Hospital, Austin street, Bethnal Green, E—Sen Res M O £140 Jun Res M O £100 Also Asst Cas O At rate of £100

Miller General Hospital for South East London, Greenwich road, S.E—Hon Asst P

Newark Hospital—Res H S £200

Northampton County Borough Education Committee—Asst School Dentist £450

North Middlesex Hospital, Edmonton, N—Asst M O £400

Oxford, Radcliffe Infirmary and County Hospital—H S and Obstet H P At rate of £120

Plymouth, Borough of—Asst Port M O £750

Queen Charlotte's Maternity Hospital, Marylebone road, N W—Asst Res M.O At rate of £80

Queen Mary's Hospital for the East End, Stratford, E—Hon Asst Phys Also H P , H.S 's. Obstet. H S Also H P and Cas O

Rochdale Infirmary and Dispensary—Jun H S £200

Royal Chest Hospital, City road, E C—P to Out-patients

Royal Dental Hospital of London, Leicester sq , W C—Hon Path

Royal Free Hospital, Gray's Inn-road, W C—Res Anæsthetist

Royal London Ophthalmic Hospital, City road, E C—Out-patient Officers Each £100

Royal Naval Dental Service—Dental Officers

Royal Northern Hospital, Holloway, N—Asst Surg O £75

Royal Waterloo Hospital for Children and Women, Waterloo road, S E—Hon Asst Ophth Surg

St Leonards Hospital, 204, Hoxton st , N—Asst Res M O £350

Sheffield Royal Infirmary—H S At rate of £80

Smethwick County Borough—Asst M O H £550

Southampton Free Eye Hospital—H S £150

South London Hospital for Women, South Side, Clapham Common, S W—Clin Asst to Ear, Nose, and Throat Dept

University of London—University Chair of Pathology £1000

Victoria Hospital for Children, Tite-street, Chelsea, S W—Sen Res M O £250

Warwickshire, King Edward VII Memorial Sanatorium, Hertford Hill, near Warwick—Asst Res M O £350

Willesden General Hospital, Harlesden-road, N W—Hon Surg to Ear, Nose, and Throat Dept Also Clin Assts to Out patients

Windsor, King Edward VII Hosp—Jun H S At rate of £100

Woolwich Union—M.O £200

York Dispensary—Res M O £150

The Chief Inspector of Factories announces the following vacant appointments for Certifying Factory Surgeons Canterbury, Kent , Chepstow, Mon , Tarbert, Argyll , and Totnes, Devon

The Home Secretary gives notice that he is considering the appointment of an additional Medical Referee under the Workmen's Compensation Act for the districts of the Chester, and Nantwich and Crewe County Courts (Circuit No 7) Applications for the post should be addressed to the Private Secretary, Home Office, and should reach him not later than June 15th

The Home Secretary also gives notice that, owing to the resignation of Dr T Ferguson a vacancy has arisen for a Medical Referee under the Workmen's Compensation Act for Dumfries County (Sheriffdom of Dumfries and Galloway) Applications for the post should be addressed to the Private Secretary, Scottish Office, Whitehall, London, S W 1, and should reach him not later than June 15th

Births, Marriages, and Deaths.

BIRTHS

Braine.—On May 22nd, at Bentinck-street, W , the wife of John Carter Braine, F R.C S , of a daughter

MARRIAGES

Morrison—Collins—On May 19th, at Holy Trinity Church, Marylebone, W , Henry Morrison, M A., M D Camb , to Olive Mary Collins daughter of Maurice Collins

Parsons—Sabberton—On May 18th, at St Andrew s Church, Chesterton, Cambridge, Frank Bett Parsons M B , L R C P, M R.C S , to Elizabeth Winter, only daughter of Mr and Mrs R W Sabberton, of the Ferry House, Chesterton, Cambridge

DEATHS.

Bryce.—On Sunday, May 8th 1927, at 72, Stroud Green road, London, N John Richmond Bryce, M D , D P H , Barrister-at-Law, in his sixty sixth year

N B—*A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths*

Notes, Comments, and Abstracts.

A CRITICAL REVIEW OF SOME MEDICAL VIEWS ON BIRTH CONTROL

By C P Blacker, M R C S Eng

So recently has the subject of artificial control of conception come within the acknowledged orbit of the medical profession, and so strongly felt is the opposition to it in many quarters still, that the reader should not expect to find, in any existing work purporting to be a compendium of different opinions, anything approaching unanimity Yet, full allowances for diversities of outlook having been made, the disagreements between the various contributors to the most recently published symposium on the subject may cause some surprise, more especially as the choice of writers seems to have been restricted to those whose views on birth control range only from cautiousness to open opposition The collection of essays[1] in question, written by six medical men and two medical women, with an introduction written by Sir Thomas Horder, has been produced under the editorship of Sir James Marchant, the secretary of the National Birth Rate Commission

In his introduction, Sir Thomas Horder warns his readers not to be disappointed if they discover that the papers which follow are written " more in a spirit of scientific inquiry than to give expression to a personal conviction, still less to personal inclination " (p ix) Better would this warning have been omitted Of relevant scientific inquiry there will be found in these pages little Of expression of personal conviction there is provided more than enough Two of the contributors are committed by their religious beliefs to an attitude of hostility to birth control which renders disinterested scientific inquiry practically impossible. When one writer assails a given process which is supposed to be under investigation with every available argument, and concludes that the process in question is contrary to God's will, it is difficult to believe that collaboration is being given to disinterested scientific inquiry, and that personal convictions, still more inclinations, are being entirely eliminated

Sir Thomas Horder, " despite considerable time spent in reading the views of others, and no less time spent in thinking upon this large and important matter," finds that his own opinion persists in remaining unformulated Advocates of birth control are relegated to three groups Supporters of women's rights and labour leaders make the first two groups, while sociologists, eugenists, and patriots together constitute the third group, whose claims to be heard merit the closest attention. It is noteworthy that medical men and women are inconspicuous within this group, but the silence of the profession, it is argued, is due rather to appreciation of the difficulties which surround it than to indifference or defective training, but as regards this point Dr Letitia Fairfield, who, on page 115, observes that " the subject of contraception is not even taught in the medical schools," holds contrary views to Sir Thomas Horder Turning to the practical aspects of the question, Sir Thomas Horder, in common with Dr Crichton-Miller and Dr Buist, but in contrast to Dr Mary Scharlieb, considers abstinence an impracticable solution. Likewise is rejected as feasible restriction of intercourse to the " safe " period, on the grounds that the safety pertaining to this period is of dubious value, and that the time of a woman's low procreative power does not always synchronize with her period of high sex desire To this argument, Sir Thomas Horder says, he had seen no reference made till he read these essays In condemning the safe period, he is in agreement with Dr Buist (p 91), but in disagreement with Dr Scharlieb (p 62) and Dr Giles (p 82) Dr Crichton-Miller does not give his views on the psychological aspect of this point, which is regrettable Chemical methods of preventing conception are condemned, and, less roundly, mechanical methods also, with some inconclusive remarks upon the double bearing of birth control upon the individual in his private life, and upon organised society, the introduction comes to an end

The first paper in the book is by Dr Crichton-Miller upon " The Psychological Aspect of Contraception " Despite its title, this essay is concerned more with the ethical than with the psychological aspects The writer condemns infanticide, abortion, and coitus interruptus, and holds that abstinence, though feasible in a few, is not practicable in the majority of cases Without discussing the important question raised by other

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[1] Medical Views on Birth Control By Eight Writers Martin Hopkinson and Co , Ltd 1926 Pp 172 6s

Medical Diary.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole street, W

Wednesday, June 1st —5 P M, Surgery (Cases at 3 30 to 5 P M) Discussion on the Treatment of Cleft Palate by Operation Openers Sir James Berry and Mr Grey Turner Other speakers Mr Addison Mr Seymour Barling, Mr Barrington Ward, Mr C H Fagge, Mr John Fraser, Mr Kelsey Fry, Mr Gillies, Mr Goyder, Mr Twistington Higgins, Mr Warwick James, Mr T P Legg, Mr Cortlandt MacMahon, Mr Nitch, Mr Pitts, Mr Rayner, Dr Victor Veau (Paris), and Mr Wardill Demonstration (at 3 45 P M) Mr Wardill Demonstration of an Apparatus for the Estimation of Palatal Incompetence, with especial reference to Deficiencies of Speech

Thursday —5 P M, Comparative Medicine Adjourned meeting to conclude the discussion of the paper by Dr M J Rowlands on Rheumatoid Arthritis—Is it a Deficiency Disease ?—read before the Section on Wednesday, May 25th

Friday —8 30 P M, Social Evening From 8 30 to 9 P M Fellows and guests will be received in the Library by the President and Lady Berry Members of the Inter State Post-Graduate Assembly of North America will be invited At 9 30 P M an address will be delivered by Dr G W C Kaye, Superintendent, Physics Department, National Physical Laboratory, Teddington, on X Rays and Some of Their Uses

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION, 1, Wimpole street, W

Monday, May 30th, to Saturday, June 4th —Fellowship of Medicine On Mon at 2 P M Dr A S Woodwark will give a lecture on Diabetes at the Royal Waterloo Hospital On the same day, at 2 P M, Dr W McK McCullagh will give a clinical demonstration at the Samaritan Hospital for Women The above are free to members of the medical profession

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N

Monday, May 30th —2 P M, Medical Cases in the Wards 2 30 P M to 5 P M Medical, Surgical, and Gynæcological Clinics Operations

Tuesday —2 30 P M to 5 P M, Medical, Surgical, Throat, Nose, and Ear Clinics Operations

Wednesday, June 1st —2 30 P M to 5 P M, Medical, Skin, and Eye Clinics Operations

Thursday —11 30 A M, Dental Clinic 2 30 P M to 5 P M, Medical, Surgical, and Ear, Nose and Throat Clinics Operations

Friday —10 30 A M, Throat, Nose and Ear Clinics 2 30 P M to 5 P M, Surgical, Medical, and Children's Diseases Clinics Operations 4 30 P M, Special Demonstration on Selected Cases of Nerve Diseases by Dr L R Yealland

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W

Monday, May 30th —10 A M, Mr MacDonald Genito-Urinary Operations 2 P M, Dr Ironside Medical Out patients 5 P M, Mr Addison Inflammatory Conditions of Breast

Tuesday —10 A M, Medical Registrar Ward Demonstration 2 P M, Mr Addison Operations 4 P M, Mr Sinclair Gastric and Duodenal Ulcer

Wednesday, June 1st —10 A M, Dr Owen Medical Diseases of Children 12 15 P M, Dr Burnford Medical Pathology 2 P M Dr Scott Pinchin Medical Out-patients 5 P M, Mr Donald Armour Head Injuries

Thursday —10 A M, Dr Grainger Stewart Neurological Department 2 P M, Mr Bishop Harman Eye Department 4 P M, Dr Snowden Development of the Mind

Friday —10 A M, Dr Dowling Skin Department 11 A M Dr Pritchard Modern Methods in Medicine 2 P M, Mr Vlasto Throat, Nose, and Ear Department

Saturday —9 30 A M, Dr Burnford Bacterial Therapy and Ward Visit 10 A M, Dr Owen Medical Diseases of Children

Operations, Medical, Surgical and Special Out patients daily, 10 A M to 5 P M, Saturdays, 10 A M to 1 P M

LONDON SCHOOL OF DERMATOLOGY, St John's Hospital, 49, Leicester-square, W C

Tuesday, May 31st —5 P M, Dr H Haldin Davis Drug Eruptions

Thursday, June 2nd —5 P M, Dr A. Whitfield Eczema (1)

GUY'S HOSPITAL MEDICAL SCHOOL London Bridge, S E

Friday, May 31st —5 30 P M, Prof E H Kettle Inflammation and Infection (Third of four free lectures)

INSTITUTE OF PATHOLOGY AND RESEARCH, St Mary's Hospital, W

Thursday, June 2nd —5 P M, Prof C A Lovatt Evans The Alkalinity of the Blood

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, Hunter street, W C

Monday, May 30th —5 30 P M, Prof H Beckwith Whitehouse The Menstrual Function (Last lecture)

ROYAL NORTHERN HOSPITAL, Holloway-road, N

Tuesday, May 31st —3 15 P M, Dr C C Beatty Dyspepsia in Children

UNIVERSITY COLLEGE, Gower-street, W C

Tuesday, May 31st —5 30 P M, Mr W H McLean (late Sudan Government Services) National, Regional, and Town Development Planning (Last lecture)

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS

Tuesday, May 31st —3 30 P M (at the Jessop Hospital), Prof Phillips Some Obstetrical Emergencies

Friday, June 3rd —3 30 P M (at the Royal Infirmary), Mr Mount Clinical Cases

MANCHESTER ROYAL INFIRMARY POST GRADUATE COURSE

Tuesday, May 31st —4 15 P M Dr T H Oliver The Parathyroid Gland and Its Use in Medicine

Appointments.

Campbell, Janet R, M B, Ch B Glasg, D P H, Asst Medical Officer and School Medical Officer for Chesterfield.

St Thomas's Hospital Harper, C H, M R C S, L R C P Lond, Thorold, G P, M B, B Ch Oxf, Ellis, R W B, M B, B Chir Camb, Connell, A B, M R C S, L R C P Lond, Wigley, J G, M B B Chir Camb Metcalfe, R H, M B, B Chis Camb Yule, E, M R C S, L R C P Lond, L D S Vict, B D Sc., Melb, D D S Chicago, Richardson, L A, M B, B Chir Camb, Casualty Officers and Resident Anæsthetists Milford, R D, M B, B Chir Camb, Ames C R, M B, B S Lond, Ling, T M, M B B Ch Oxf, Williams, D O, M B, B Ch Oxf, Resident House Physicians Chiesman, W E, M B, B Chir Camb, Resident House Physician (for Children), Blaxill, B, M R C S, L R C P Lond, Fothergill, E L, M B, B Ch Oxf, Croft, C R, M B, B Ch Oxf, Byrne-Quinn, A, M B, B S Lond, Resident House Surgeons, Tippett, G O, M B, B S Lond, Resident Orthopædic House Surgeon, Screech, J A, M B, B S Lond, Resident House Surgeon for the Ear, Morris, I, M B, B Chir Camb, Resident House Surgeon for the Throat, Wrigley, A J, M B, B S Lond, F R C S Eng, Dewey, T S, M B, B Chir Camb, Obstetric House Physicians, Dykes Bower, M, M B, B Ch Oxf, Barnes, J F L, M R C S, L R C P Lond, Ophthalmic House Surgeons, Hartley, J A, M R C S, L R C P Lond, Stent, J F, M R C S, L R C P Lond, Marriner, H I, F R C S Edin, Cox, H T M R C S, L R C P Lond, Wallis, A S, M R C S, L R C P Lond, Carothers, J C D, M R C S, L R C P Lond, Neilson, D F A, F R C S Eng, Walford, A S H, M B, B Chir Camb, F R C S Eng, Ashton, J M, M R C S, L R C P Lond, George, J B; M R C S, L R C P Lond, Barron, H T, M D Lond, Bevan, A., M D Lond, Apthorpe, R G, M R C.S, L R C P Lond., Henry, G R N, M R C S, L R C P Lond; Lloyd-Williams, P, M R C S, L R C P Lond, L D S, Nosworthy, M D, M R C S, L R C P Lond, Nicory, C, M R C S, L R C P Lond, Hallett, D B I, M B B Ch Oxf, D M R & E Camb, Phillips, R A., M.R C S, L R C P Lond, Purvis, W P, M R C S, L R C P Lond, Lankester, A H, M R C S, L R C P Lond, Wallis, A S, M R C S, L R.C P Lond, Shires, B, M B, B Ch Edin, Rickman, J, M D Camb, Babington, G C, M R.C S, L R C P Lond., Burrows, S M, M R C S, L R C P Lond, Walton, L H F, M R C S, L R.C P Lond, Brockman, E P, M B, M Chir Camb, F R C S Eng, Butler, R W, M R C S, L R C P Lond, Farmer A P, M R C S, L R C P Lond, FitzGibbon, G M, M R C S, L R C P Lond, Windsor, C G, M R C S, L R C P Lond, Goadby, H K, M R C S, L R C P Lond, Milward, F J, M R C S, L R C P Lond, Stevenson, T C, M R C S, L R C P Lond, Rowan, G E, L M S S A, M R C S, L R C P Lond, Purcell, F W F, M R C S, L R C P Lond, Addison, G M, M R C S L R C P Lond, Oddie R, M R C S, L R C P, Lond, Chief Assistants and Clinical Assistants

Certifying Surgeons under the Factory and Workshop Acts McGregor, A W, L R C P, L R C S Edin, L R F P S Glasg (Mauchline District of Ayr), Davies, D, L R C P. Lond, M R C S (Resolven District of Glamorgan)

Vacancies.

For further information refer to the advertisement columns

All Saints' Hospital for Genito-Urinary Diseases, Vauxhall Bridge road, S W —Res Sen H S At rate of £200 Also Non Res Jun H S At rate of £150

Barking Town Urban D C —M O H, &c £850

Belfast, Mater Infirmorum Hospital —Hon Radiologist

Birmingham City Education Committee —Asst Sch M O £600

Bolingbroke Hospital, Wandsworth Common, S W —Hon P Dermatologist Hon Asst P Neurology, Hon Asst Ophth S Also H P At rate of £120

Bradford, City of —Asst School M O £600

Bristol General Hospital —Hon Clin Assts

Bristol Royal Infirmary —H P £80

Burton-on Trent Infirmary —H S, Jun Res H S £150

Buxton, Derbyshire, Devonshire Hospital —Asst H P £150

Canterbury, Kent and Canterbury Hospital —3rd Res M O £125

Charing Cross Hospital, Strand, W C —Registrar £100 Also Hon Anæsthetist

Chelsea Hospital for Women, Arthur street, S W —Jun H.S At rate of £100

Chester Royal Infirmary —Third H S £150

City of London Hospital for Dis of Heart and Lungs, Victoria Park, E —H P At rate of £100 concluded that for normal people artificial birth control is not necessary, because "Nature is a sufficient teacher" (p 163) What, precisely, is here meant by "Nature," thus personified, is not made clear It would seem that by it the writer understands the sum of those processes which, in a slum area near Birmingham, are responsible for prolonging the average interval between children from 18 months to over three years The most valuable part of this paper will be found in the last three pages, in which Sir John Robertson advances interesting evidence of the demoralisation caused among young unmarried men and women in and around Birmingham, by the propaganda of firms that manufacture contraceptives Realisation, in fact, of the pernicious influence of this trade was alone responsible for persuading this writer to contribute to the book under review So harmful does he consider the wholesale distribution of contraceptives among the unmarried, that he would advocate the suppression by law of all advertisements relating to contraceptives With this important plea, the book ends

It will be seen that there is little harmony of opinion in this work There are irreconcilable differences of ethical opinion, and there are differences no less fundamental with regard to method Differences in ethical opinion are inevitable, and could only be avoided by restricting the choice of writers even more drastically than has been done by Sir James Marchant here But differences with regard to method fall into a different category These are capable of almost complete reconciliation by reference to data. Statistical evidence the book contains, but it has little bearing upon the limited medical question which confronts the practitioner who has to decide how best to advise a patient who wishes to avoid pregnancy In a book purporting to express medical opinion, it is reasonable to expect medical problems to be discussed Yet questions such as What is the exact evidence for supposing that contraceptives produce sterility? If sterility is thus produced, which contraceptive is most likely to produce it—coitus interruptus, the sheath, the douche, the quinine suppository, the lactic acid suppository, or the rubber pessary? Which of the above methods is most likely to produce psychoneurosis? How often are erosions or other genital disease caused by rubber pessaries? Which method is the most reliable, and which least? After pelvic examination by a doctor and after fitting of the pessary is the likelihood of failure, or the probability of genital disease diminished?—these and numerous other strictly medical questions, upon which all practitioners who are consulted on this matter will desire information, remain, in this book, not only unanswered but practically unraised

It may be taken as certain that this is very far from being the last word that the medical profession will have to say on birth control

PHARMACISTS AND EARLY CLOSING

THE DEPARTMENTAL COMMITTEE'S INQUIRY

EVIDENCE was given last week by Mr H J MARTIN, chairman, and Mr G A MALLINSON, secretary, of the Retail Pharmacists' Union, before the Departmental Committee appointed by the Home Secretary to inquire into the working of the Shops (Early Closing) Acts, 1920 and 1921, and to consider and report whether it is desirable that those Acts should or should not be made permanent, and, if so, whether with or without modifications

They stated that the Retail Pharmacists' Union represents the retail chemists of England and Wales and that its membership exceeds 7000 out of a possible total of approximately 8500 Membership is confined to persons, firms, and bodies corporate actually keeping open shop for the sale of medicines, &c, in accordance with the requirements of the Pharmacy Acts The membership does not include the large multiple shop chemist concerns, but it claims to cover very effectively the smaller chemists as well as those in a larger way of business The business hours of pharmacists before the introduction of compulsory early closing were exceeded by very few of the other retail trades It was a common practice, particularly in the towns and cities, for chemists' hours to be from 8 A M to 9 P M. to 10 P M every day with Saturday an hour later Even in the country districts the chemists' shop was usually the last one to close and there the general closing hour was from 8 30 P M. to 9 30 P M. In those cases where it was not possible for the proprietor to keep a qualified assistant, he obtained no relief whatever and had to be continuously on duty 13 hours per day The popular idea had been that the pharmacist lived over his premises to give the public the opportunity of obtaining medicines out of hours In fact it was absolutely necessary for the single handed pharmacist for physical reasons An outstanding result of the introduction of early closing had been the improved physical condition of both pharmacists and their assistants owing to their having opportunities for outdoor exercise and recreation Inquiries had revealed the fact that the great majority of customers realised the relief given by the shorter hours to pharmacists and had not expressed any desire that there should be a return to the old conditions The minority who had expressed other views had changed their opinion when they discovered that it was possible to obtain medicines required in cases of illness outside the statutory hours Pharmacists were in favour of a provision to deal with cases of illness, but they were of opinion that the existing exemption met the public needs

The Doctor's Evening Consultation

In reply to questions, Mr Mallinson said that pharmacists had to wait for the evening consulting hours of doctors and that meant that they were tied Closing hours of 7 or 8 P M would not suit them because the doctors did not see their evening patients till between 6 and 7 P M, and their prescriptions had to be dispensed after that Mr Martin said that there was no necessity for a later closing hour on Saturdays Doctors did not, as a rule, see many patients on Saturday nights In most towns there were a sufficient number of chemists living on their business premises to dispense medicines required after regular hours Mr Mallinson explained that if a chemist was on the National Health Insurance panel, even if he did not live on the premises, a notice was posted up showing where medicines could be obtained when the shop was closed There was no such provision if the chemist was not on the panel

Replying to further questions, Mr Martin said that doctors knew where prescriptions could be dispensed in cases of emergency They directed their patients accordingly, and it was the business of the chemist as a rule to see that the doctors understood that there was a service available

The CHAIRMAN Where the doctor's surgery hours close at 7, is there sufficient time for a member of the public to get his prescription made up before the chemist's closing hour at 8?—Yes, generally speaking

Where the surgery hours are later is there sufficient time?—Not always, it depends on circumstances

The witness added that he had never heard of any complaints that the closing hours so far as prescriptions were concerned were too early He was not aware that any complaints had been made to the Minister of Health on the subject. It was part of their duty as a national organisation to negotiate with the Ministry of Health in connexion with National Health Insurance In that connexion from time to time the question of evening surgery hours had been raised, but it had never arisen in the form of a complaint from the Ministry that insured persons were unable to get their medicines Although the shop closed at 8 P M prescriptions were accepted in the majority of cases in the same way as if the shop was open Where it happened that the doctors had later consulting hours the chemists accommodated themselves to those hours

TRANSATLANTIC FLIGHT

Two continents were thrilled early in the week by the successful flight of the young American, Capt Charles Lindbergh, from New York to Paris without alighting In a sense his journey was not such a feat of endurance as that of his predecessors, Captain J Alcock and Lieutenant A W. Brown, who made the crossing in June, 1919, for Captain Lindbergh sat in an enclosed cabin protected from the weather and removed from the intolerable roar of the screw, but the distance he traversed was nearly double that of the previous transatlantic flight, and through every minute of the 33½ hours during which he was in the air all his senses must have been alert and attentive to the slightest stimulus, for although he had for the most part favouring wind, yet he had to traverse prolonged belts of fog extending upwards from the sea to any navigable altitude Travelling alone, he was able to save the weight of a companion but even then was so hampered by the gross weight of fuel for the long non-stop journey that his initial speed was well under 100 miles an hour, although it quickened to something like 105 miles an hour at the end On the average, however, he travelled more slowly than his predecessors His exploit should perhaps be regarded less as a feat of endurance than as an almost birdlike adaptation to the medium in which he was travelling He carried with him only the simplest instruments designed and partly executed by himself, and his charts were of the simplest, while his vestibular sense was evidently better than those of his predecessors, who admitted that they were often unaware when their vertical direction was changing His sense of horizontal direction seems not to have been impaired in the least by the absence of direct vision, for his position in the fuselage made him writers of the relation that may exist between neuroses and the use of contraceptives, he does not seem to give much weight to this relation The sentence "Modern contraceptives that are both reliable and innocuous enable a young married couple to contemplate parenthood as such, and isolated from other considerations" (p 11) seems to imply that in Dr Crichton-Miller's view some modern contraceptives are both reliable and innocuous It is a pity that he did not proceed to specify which contraceptives he regarded in this light, what he considers the degree of their reliability and the conditions of their innocuousness His attitude to birth control is tolerant, and is brought into line with a philosophy of life described as a "gospel of trusteeship" Man is "entrusted" with certain powers and liberties of which he must make fullest use Contraception has enriched and at the same time endangered marital relations The perils which are opened up can only be avoided through humanity striving towards a higher level of personal idealism than now obtains Contraception has in fact rendered both more august and more precarious the "stewardship of the clean blood of the race" (p 21) The ethical outlook implied by belief in "trusteeship" in this context is irreconcilably opposed to the ethical outlook of Drs Scharlieb and Fairfield as expressed in later chapters This essay, which can best be regarded as a philosophy of birth control, is carefully and in places inspiringly written

The next contribution, from the pen of Dr Leonard Hill, is called "Fertility and its Control" Consideration of the vital statistics of this country reveals discrepancies in fertility between different classes which there are reasons for supposing may be, in part, expressions of vicissitudes in race physiology rather than consequences of birth control Poor food and hard work conduce to fertility Idleness, abundant food, and high intellectual capacity lead to sterility There is evidence that the seminiferous tubules of the testicle require exposure to alternations of temperature in order to function their best Thus monotonous warm atmospheres and overclothing may lead to lessened fertility The fecundity of animals is promoted by feeding them on food containing abundant vitamins and calcium, and by exposing them to sunlight In common with most of the other writers in this book, Dr Hill asserts that contraceptives produce permanent sterility, though no evidence is advanced by him any more than by the others to indicate which contraceptives have this effect His essay, in fact, shows that the allegation that the use of contraceptives has in any given case produced sterility, is a very difficult one to prove, seeing how much sterility seems to exist quite apart from the use of contraceptives

The third paper is written by Dame Mary Scharlieb, an uncompromising opponent of birth control She begins her essay with the statement that the problem of whether artificial prevention of conception benefits or injures those who practise it is not one that lends itself to statistical treatment Six arguments customarily advanced by birth-controllers are considered, and answers to them are propounded which vary much in the extent to which they are likely to produce conviction in the reader To normal people anxious to space their families, three pieces of advice should be given by the doctor Firstly, they should be told to restrict intercourse to the "safe" period—i e, from the seventeenth day of the inter-menstrual period until the end of this period (German figures are reproduced from another book indicating that this period is really "safe"—a view not shared by other writers in this book) Secondly, they should be advised to avail themselves of the period of lactation which is usually one of infertility Lastly, normal people should be informed "that marriage is not intended as a mere sanction of cohabitation but that it exists for the high and holy purpose of the increase of the human race for a kindly provision for the right fulfilment of God-given instincts, and also for the spiritual and moral joy of the couple" (p 61) The man or woman who will not thus practise self-restraint, who uses in fact, any form of contraceptive, is practising "*Masturbation à deux*" (p 61) The essay ends with the remark that the whole aspect and story of artificial birth control is so sordid that it is difficult to understand that anyone should be willing to advise such methods This paper is an impressive statement both of inclination and of conviction

The fourth contribution is by Dr A E Giles who holds that the best method of preventing conception is, when possible, abstinence "The next best plan is the restriction of intercourse to the times when conception is least likely to occur" (p 82) Other methods are described, but are collectively regarded as inferior to these two This essay, however, stands out in that it contains the only piece of original statistical evidence bearing upon the harmfulness of contraception which will be found in this book The figures are held to indicate that fibroids of the uterus are caused by the use of contraceptives "Of 881 cases," writes Dr Giles," in which the diagnosis of fibroid tumours was verified by operation, 271, or 30 8 per cent., occurred in single women, 176, or 20 per cent, were in childless married women The remaining 434, or 49 2 per cent, were in women who had had children but among them the average time that had elapsed since the birth of the last child was 10 years" From these figures Dr Giles considers it sound to conclude "that if *uterine congestion is frequently stimulated by married life* without the opportunity of this congestion finding its normal outlet in pregnancy, it is all the more prone to expend itself in the formation of fibroid tumours Consequently, when birth control is practised from the outset of married life, before any pregnancies have taken place, it seems certain that the practice favours the development of fibroid tumours of the womb" (pages 87 and 88) The certainty of this conclusion would appear, however, to be somewhat weakened by the fact that nearly a third of Dr Giles's cases were unmarried women in whom uterine congestion had, presumably, never been stimulated by married life As they stand, Dr Giles's figures seem to suggest that uterine fibroids are just as likely to be caused by abstinence as by the use of contraceptives.

The next essay is written by Dr A C Buist, who rejects abstinence as a method of birth control, on the grounds that it is "usually not feasible, and when it is feasible, not always harmless" (p 93) Likewise opposed are coitus interruptus, the utilisation of the "safe" period, and the practice of douching after coitus Other preferable methods are passed over with the remark that they are "described in sufficient detail in available publications" The rest of the paper is concerned with ethical, biological, and social considerations from which no definite conclusion is drawn

The sixth paper is contributed by Dr Letitia Fairfield, and is called "The State and Birth Control" Dr Fairfield, *who writes with a clarity and vigour not conspicuous in much* of the book, argues that if the Ministry of Health were to authorise local authorities to give information on contraception to whomsoever asked for it (which was the measure proposed recently in the House of Commons), two unfortunate consequences would follow The first is that maternity and child-welfare centres, which are partly supported by private subscription and partly subsidised by the Ministry of Health, would, so far as their private support is concerned, be split from top to bottom if the teaching of birth control were compulsorily made a part of their function The second difficulty consists in the impossibility of leaving to the medical man or woman in charge of the centre the decision as to whether the conditions of economic difficulty under which a given patient is living, provide justification for teaching that patient contraceptive methods This is a valuable essay, which all advocates of birth control would do well to study despite the ill-concealed dislike manifested of Neo-Malthusians and Eugenists—classed together—who are held to advocate birth control because they contemn humanity (p 129), the people alluded to on the last line but two are clearly the Neo-Malthusians and Eugenists attacked at the bottom of p 108 and the top of p 109 Medical officers of health, on the other hand, are represented as advocating birth control because they respect and love humanity (p 112) That Dr Fairfield's dislike of birth control may, in part at any rate, be inspired by theological *considerations is suggested by one* of her concluding sentences "The demand for birth control is begotten of despair in God and man, it will grow as belief in religion and the dignity of man fails, and it can only be countered by a re affirmation of belief in both" It might be commented that a contempt for humanity is not necessarily implied by the belief that human beings differ from one another in value, *and that these differences have an effect upon society*

Sir Arthur Newsholme devotes the next contribution to "Some Public Health Aspects of Birth Control" His contention, which is mainly statistical in nature, is that though the recent decline in the birth-rate has not yet produced a stationary population (our population is increasing to day at the rate approximately of 1 per cent per annum—i e, over 5000 a week), there is, so far as can be seen at present, a likelihood that the birth-rate will fall further, and that this contingency will be realised or even exceeded in a decreasing population The writer proceeds to argue that socially valuable qualities are not necessarily the monopoly of the well-to-do, but may be equally distributed throughout all social strata What differences are manifested between different classes in this matter are as likely to be the products of environmental as of hereditary processes, so that in aiming at improving the environment of the less well-to-do, we are on safer ground than in urging them to adopt birth control

The last paper is written by Sir John Robertson After some obscure reflections upon the beneficence of Nature in "stepping in" and spacing *the intervals at which* children are born into human families (p 152), *this* authority proceeds to consider the fertility rates of unskilled as compared to the artisan classes, and of urban as against rural districts The indications for the exercise of conception control are reviewed, and it is

Some Aspects
OF
INFLAMMATION AND INFECTION *

A Course of Four Lectures delivered for the University of London at Guy's Hospital on May 20th, 27th, 31st, and June 3rd, 1927,

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LECTURES I AND II.

I PROPOSE to discuss in this short course of lectures certain aspects of inflammation and infection which scarcely seem to have received of recent years the attention due to their theoretical and practical importance. I am encouraged to do this because, as I understand them, these lectures have nothing to do with examinations or degrees and form no part of a prescribed course of study. They are as it were luxury entertainments, and I do not feel that in delivering them it is incumbent upon me to restrict myself to orthodox teaching. A good deal of what I have to say is based on fact, but much is purely speculation, and not to be accepted without close scrutiny.

Inflammation is one of the most hackneyed and well-worn subjects in the whole of pathology, yet if we accept the definition of inflammation as "the reaction of irritated and damaged tissues which still retain vitality," we must, I think, admit that our ignorance of the inflammatory process is greater than our knowledge. Similarly, though we are all familiar with the process of infection in a rough and ready way, it cannot be said that our knowledge is sufficiently great to enable us to cope successfully with the microbic diseases. The reason is not far to seek. It is not because the microbic diseases present an insoluble problem, but because they have not been studied in the best way. Since this is the first unorthodox statement I have made, it would be as well perhaps if I made my meaning clear.

THE DOMINANCE OF BACTERIOLOGY.

The last 30 or 40 years have witnessed a subtle alteration in our conceptions of disease, which has come about so gradually as almost to have escaped notice. The work of the great clinicians, among whom this school is proud to remember Bright, Addison, Hodgkin, Wilks, and Moxon linked certain morbid symptoms with definite morbid anatomical lesions; Virchow and his followers traced these lesions to the actual constituents of the tissues, the cells; the study of disease became systematised and defect of function became correlated with defect of structure. Exactly how the anatomical and histological lesions upon which the illness of the patient depended were brought about was not recognised; indeed in many forms of illness it was not possible to distinguish specific lesions. Nevertheless, it was believed in those not very distant days that disease meant some definite structural alteration in the tissues of the body. The actual cause of the change in the tissues was, as I have said, unknown, though for centuries medical opinion had coquetted with the doctrine of contagium vivum. Writing in 1546, Fallopius says:—

> "Every contagious disease spreads itself throughout the whole infected substance. Thus, in phthisis, this force of contagion is conveyed by the vapour which comes from the lungs. This vapour contains certain minute corpuscles of the blood which issue forth with the breath and are spread by the circumambient air. So they are attracted to the lungs of another, and if they then reach a suitable soil they infect it and communicate the disease."

The belief in the external agent was formally established by the work of Pasteur, Koch, and the great bacteriologists who followed them, and from that day to this attention has become more and more focused on the parasite and less and less on the host. It is hardly to be wondered at if we have a little lost our heads over microbes. The isolation of a pathogenic micro-organism in pure culture from a patient and the reproduction of the disease in an experimental animal with this isolated organism forms a fascinating piece of work, but we cannot get away from the fact that a pathogenic organism can only be pathogenic if it has a host to be pathogenic in or on. It is obviously true that if there were no tubercle bacillus there would be no consumption; on the other hand, in the absence of a suitable host, no tubercle bacillus can fulfil its destiny. Furthermore, it is possible to bring the tubercle bacillus into intimate contact with a suitable host without producing tuberculosis.

The Reaction of the Host.

Without belittling the importance of bacteriology, it must surely be admitted that in any infectious process the microbe is only part of the story, and not the most important part either. It is the reaction of the host to the presence of the microbe which constitutes the condition we have to study, and though regarded as an exercise in the science of botany the intensive study of the tubercle bacillus has great merit it will never solve the problem of tuberculosis. But for the last 30 years we have been steadily moving away from our proper objective. For example, it is extremely difficult to explain why the meningococcus, which is often enough a normal inhabitant of the perfectly healthy person's nasopharynx, should be able to cause meningitis; it is, on the other hand, fairly easy to grow the meningococcus outside the body and to study its biological properties. Hence, whilst the pathologist remains ignorant about the essential cause of cerebro-spinal meningitis, the bacteriologist can tell us all that any reasonable man can want to know about the meningococcus itself. Similarly, while ignorant of the essential pathology of pneumonia, we devote ourselves to the typing of the pneumococci. It is bad enough to shirk the real problem for the easier task, but as a matter of fact our devotion to bacteriology has really increased our difficulties. In the early days of immunology, when it seemed that the promised land was really in sight, there was every encouragement to identify shades of difference in superficially similar microbes, for antigenic properties are highly specific. But it would appear that many of these differences are of little practical moment. There are four recognised types of the tetanus bacillus, for example, and many more types of virulent diphtheria bacilli, but all tetanus bacilli produce the same toxin, which is neutralised by a single antitoxin, and the same applies to the diphtheria bacillus. For the present, I think, we might be satisfied with a simpler bacteriology in medicine, and return to the real problem. Inasmuch as the pathogenic micro-organisms produce definite lesions in the body, and are only of importance because they do this, would it not be possible to classify them according to the lesions they cause, disregarding the minor variations they exhibit in morphology and biological properties? It would of course be a rough and ready classification, and it would break down from time to time, as all classifications do, but it would at least have the virtue of focusing our attention on the really important thing, the disease. If the science of bacteriology is to achieve the great position as a science which we desire for it it must extend its boundaries. It must not remain shackled to medicine; and, as a corollary to this, pathology must emerge from the dominance of bacteriology. Among other things it is to the possibility of such a simplified pathological bacteriology that I wish to draw attention in these lectures.

THE PROCESS OF INFLAMMATION.

The process of inflammation is an extremely complex one and it varies in detail with the agent which calls it forth. In some types these variations are so pronounced that the reaction is clearly specific dependent upon the periscope to see his direction. After his continuous flight of more than 33 hours he was still so much master of the situation as to circle several times over the Paris landing station before descending on ground made dangerous by the enthusiasm of an enormous crowd. He complained somewhat of stiffness of the limbs and his eyes were reddened, but he certainly was not deaf on dismounting, an affection which his predecessors had experienced. Opportunity to satisfy an enormous thirst and ten continuous hours of sleep appear to have sufficed to wipe out the travail of his journey. While all must be sensible of the skill, courage, and endurance displayed, the exploit, so happily terminated, is hardly likely to have the bearing on the progress of civilian flying which is being claimed for it by enthusiasts. No one can believe that the heavier-than-air machine is likely to make routine journeys over seas so extensive as to be practically deserted, as far as rescues in accident are in question.

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* All the lesions referred to were illustrated by lantern slides.

THE HYGIENE OF A PLEASURE STEAMER

WE were lately asked to visit the *Crested Eagle*, belonging to the General Steam Navigation Company, as she has been refitted before again taking up her daily summer trips from the Tower (9.30 A.M.) to Margate (2.30 P.M.), and return. A ship of 1150 tons, she was built by J. S. White, of Cowes, and is 300 ft. long and 68 ft. across her paddle-boxes. She draws 6½ ft., has oil-fired engines of 3500 h.p., a speed of 18½ knots, and carries 1702 passengers, whose convenience and safety has been in every way considered. The wide upper deck has a small smoking saloon, and 50 seats for over 400 passengers, each seat being available in emergency as a life-raft. The saloons on the main and lower decks are well ventilated on the plenum system by three thermotanks, which heat the air to the desired temperature; directing nozzles prevent any unpleasant draught. The large dining saloon forward has a line of great windows on each side, and two large uptakes assist the ventilation. They afford a full view of the river during meals. The grill-room below accommodates 50 people, and is kept cool by an uptake to a Boyle's ventilator on the upper deck. On the main deck, too, is the kitchen, which is very compact and has a large uptake ventilator, and also a soda fountain. Here, too, are satisfactory, well-lighted lavatories for male passengers. At the after-end is the main saloon, with *seats for 125, and at its end is the ladies' cabin*, doubled in accommodation this year, well-lighted and ventilated, and with an automatic towel supply. Below this a tea-room and a bar, with supply ventilation, and in each case three uptakes to the upper deck. All these saloons have life-belts—1800 are carried—under the seats.

The accommodation for the crew is also good and well-ventilated. Their lavatories show advance and are white-painted throughout. The w.c.'s are in white enamelled ware, but the fittings for latrine paper were broken and neglected, a douche for the firemen was unused, and the white-enamelled wash-basins were less of a credit than they would have been had a smoother surface made them more easily cleaned.

The Company is to be congratulated on the care it has devoted to the hygiene of the ship.

SYNTHALIN

DR. R. Carrasco Formiguera, director of a sanatorium for diabetics at Barcelona, has recently given an account[1] of his experiences with synthalin, a synthetic substitute for insulin, which was discovered by Dr. E. Frank, of Breslau,[2] and is said to be efficacious when administered by the mouth. Dr. Formiguera claims to be the first physician outside Germany to use this preparation, having obtained it on a special visit to that country. He describes 34 cases, and concludes that in the treatment of diabetes synthalin should prove to be a valuable adjunct to insulin, though it does not replace it except in mild cases, dietary restriction being required as well. In cases of moderate severity synthalin may make it possible to dispense with much of the insulin dosage. In severe cases complete substitution is impossible because the doses of synthalin required to control the sugar cannot be tolerated. In cases of threatening or actual coma, its slowness of action makes it almost useless. The differences in the reaction of individuals to the drug are remarkable, and intolerance was very noticeable in Dr. Formiguera's cases. Five could not tolerate synthalin at all, nine bore it badly in doses large enough to be effective, whilst 20 took it well. As a rule women show less tolerance than men. The disturbances are mainly digestive and are probably vagal in origin, Dr. Formiguera considers, as they occur equally after injection. There may be anorexia, nausea, vomiting, abdominal pains, and diarrhœa, and there is often much depression. Owing to cumulative action they may appear some time after treatment is begun. The ill-effects, he says, can sometimes be modified by giving camphor monobromide, menthol valerianate, oil of peppermint, or similar drugs, but their action is uncertain. The ill-effects with ordinary dosage as a rule disappear within 24 hours and leave no sequelæ. The existence of renal, circulatory, or digestive troubles does not appear to be a contra-indication to the use of synthalin.

LEBANON HOSPITAL FOR MENTAL DISEASES

THE twenty-eighth annual meeting was held at Friends House, Euston-road, London, on May 19th, Dr. E. W. G. Masterman, chairman of the General Committee, presiding. Dr. H. Watson Smith, who has directed the hospital for the last 17 years, personally presented his medical report. The number of patients under care during the year had risen, he said, from 230 to 308 (176 men, 132 women), the hospital being now seriously handicapped for lack of accommodation. Fifty-six patients were discharged completely recovered, and 47 improved. Among the patients many nationalities, religions, and classes were represented, from the richest to the destitute. Regular instruction in mental diseases had been given by Dr. Watson Smith to classes of students from the American University, Beyrout, and several fifth-year students (Egyptian, Syrian, and Greek) had taken resident courses of clinical study. Major J. W. Mackinnon, R.A.M.C., and Lieut.-Colonel H. G. L. Wortabet, I.M.S. (retd.), bore witness to the pressing need for this hospital in Syria, where it is still the only mental hospital, and Dr. A. J. Manasseh, of Brumana, expressed the thankfulness of Syrian medical men at having this model hospital available for their patients; the constant development in the laboratory and elsewhere astonished him at each visit. Dr. F. H. Edwards, late superintendent of Camberwell House, referred to the pioneer work of Tuke and others in substituting for imprisonment and worse—still to be seen in some countries—the good conditions and scientific treatment given to mental invalids in England to-day. The results at Asfuriyeh were excellent, partly owing to the number of acute early cases admitted. Altogether, 2877 patients had now received care and treatment there, of whom 1479 had been discharged either cured or improved. Archdeacon Beresford Potter, late of Cyprus, commended the international and interdenominational lines on which the hospital was conducted. The new report, giving the latest statistics, with tables showing kinds of insanity dealt with and occupations of the patients admitted, will be ready shortly, and can be obtained from the secretary, at 139, Marylebone-road, W. 1.

SCIENTIFIC SIMPLICITY IN PHOTOGRAPHY

UNDER this title Messrs. Burroughs, Wellcome and Co., Snow-hill Buildings, London, E.C. 1, have issued a little book showing the advantages of using "Tabloid" chemicals and containing many hints for the successful pursuit of the photographic art. The modern technique of desensitising, which to a large extent abolishes the use of the dark room, is fully and simply explained, exposure and development are dealt with at length, and there are numerous tables covering all classes of films and plates. Copies will be sent post free on application.

MAORI NAVIGATION

IN an account of an address by Dr. Peter Buck (Te Rangi Hiroa) to the Australasian Medical Congress (THE LANCET, May 7th, p. 990) it was stated that amongst the feats of Maori seamanship in the Stone Age was the voyage from Hawaii to New Zealand across some 60° of latitude. We are informed that this is incorrect and that the voyage was from Hawaiki to Tahiti, a distance of between 2000 and 3000 miles, of course with stoppages at other islands on the way.

THE LATE DR. RICHARD GRIFFITH.—At the age of 53 Dr. Richard Griffith died at Carnarvon on May 21st after a brief illness. He was the eldest son of the late Dr. Samuel Griffith and was educated at Clifton and Clare College, Cambridge. After qualifying as M.R.C.S. Eng. from the London Hospital in 1902 he settled at Portmadoc, where his father also was in practice. During the late war he held a captain's commission in the Royal Welsh Fusiliers and was present at the landing at Suvla Bay in 1915. After being wounded and invalided home he was transferred to the Royal Army Medical Corps, and served in Egypt, Mesopotamia, and Palestine. He was twice mentioned in despatches and gained the rank of brevet lieut.-colonel. Dr. Griffith, like his father, was a justice of the peace for the county of Carnarvon, and he was a medical referee for the Ministry of Pensions. He recently gave the site for a new hospital to the town of Portmadoc.

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[1] Revista Médica de Barcelona, March, 1927.

[2] THE LANCET, 1927, i., 35.

so much so, in fact, that the main facts are in danger of becoming completely obscured by a mass of detail. There is no doubt that in the future the cellular study of inflammation will prove to be of the first importance, but much work remains to be done before we shall be able to see our way clearly All I can do here is to indicate the more significant facts when discussing individual types of inflammation, though, in passing, I would note that the polynuclear leucocyte is not necessarily the earliest or the most important cell taking part in the reaction: the fixed connective tissue cells and the adventitial cells also play their part

INFLAMMATORY REACTIONS TO NON-BACTERIAL AGENTS

Although bacteria are the most important of the agents which may initiate inflammation, so much so that in our thoughts inflammation and infection are almost synonymous terms, highly instructive reactions may be brought about by other means It will not be possible to deal at all exhaustively with these non-bacterial reactions, but only to select especially two or three which have a direct application to the bacterial infections to be reviewed Moreover, even in these selected examples, only general features can be dealt with, for even the mere anatomical differences in the tissues of the various experimental animals cause variations in the lesions produced

Inflammation due to (1) *Calcium*

One of the most constant and striking of the chemical inflammations is that produced by calcium. It has been studied and clearly described by Bullock and Cramer I have mostly used mice for the study of this reaction, but have satisfied myself that calcium inflammation in other animals is comparable to that in the mouse When calcium chloride in quantities of 5–10 mg or less is injected into the subcutaneous tissues of mice an inflammatory reaction is noticeable in a few hours and fully developed in 24. Its most striking feature is an intense jelly-like œdema which extends widely and is accompanied by considerable congestion In time the œdema disappears though it may last for three days or more, but the congestion persists for considerably longer Healing takes place with the formation of vascular adhesions between the skin and the thoracic and abdominal walls. Microscopically the lesion shows, in addition to the œdema, intense dilatation of the blood-vessels with occasional hæmorrhages, and a considerable exudation of leucocytes Hyaline thrombi are often found in the dilated vessels, possibly as the result of the widespread damage to the endothelium of blood and lymph vessels Other evidence of tissue destruction is seen in the degeneration and even the necrosis of the muscle-fibres in the neighbourhood, and the skin is sometimes ulcerated The actual degree of tissue destruction, however, is scarcely appreciated till it is rendered more obvious by the subsequent process of repair The characteristic features of the reaction, then, are diffuse necrosis of tissue, varying with the intensity of the dose, pronounced congestion and an abundant inflammatory exudate of which the fluid constituent is particularly prominent In fact, the calcium reaction is apparently chiefly due to derangements of the local circulation

(2) *Silica*

An even more striking inflammatory process is that produced by silica If this substance is injected into the subcutaneous tissues of mice a sequence of changes occurs which progresses for several days Gye and Purdy have shown that silica is primarily an endothelial poison, but in concentrated doses of 5–10 mg the vascular effect is not nearly as pronounced as with calcium The lesion is primarily a destructive one, consisting of a coagulation necrosis of the tissue and the serum poured into it Within a few hours of the injection it can be recognised as a zone of necrosis, quite acellular, except for a few leucocytes at the periphery Beyond it for some distance the capillaries are dilated and engorged and present active margination and emigration of leucocytes. These polymorph leucocytes surround the necrotic zone, forming a dense band of cells which become necrosed themselves Within three days a lesion is produced, so characteristic as to be specific. It consists of a central necrotic area surrounded by a zone of leucocytes, most of which are themselves undergoing destruction Outside this there is a secondary area of necrosis, which is bounded by granulation tissue In course of time the lesion inspissates and becomes invaded by macrophages, and the final picture is that of an organising inflammatory fibrosis

The extent of the silica lesion naturally depends on the dose administered, but it always tends to be strictly localised in contrast to the widespread effect of the calcium lesion The reaction brought about by different forms of silicon, is, as I shall hope to show, a matter of considerable practical importance.

(3) *Turpentine*

Turpentine causes a local inflammation which appears to combine to some extent the features of the calcium and the silica lesions In addition to a pronounced vascular reaction, it causes tissue necrosis and a most intense accumulation of leucocytes The abscess then formed spreads by the death and solution of the leucocytes and the determination of fresh cells to the part The removal of the irritant must be a slow process, for tissue destruction continues for a considerable time, and the extent of the lesion, when compared with that produced by calcium and silica, is out of all proportion to the amount of the poison administered. Healing is naturally slow, and when it is finally achieved, is accompanied by a pronounced degree of scarring

(4) *Inert and Insoluble Substances*

Certain inert and insoluble substances also produce easily recognisable lesions in the tissues A feature common to most of them is the foreign body giant cell, a syncytial mass which surrounds the foreign substance All who have had much experience of surgical pathology must have seen many instances of this reaction around ligatures embedded in the tissues Cholesterin, as Matthew Stewart has shown, is another common cause of the foreign body type of reaction, and rather similar lesions may be produced experimentally by aluminium oxide

INFLAMMATORY REACTIONS PRODUCED BY MICRO-ORGANISMS

Tissue Predilections

Turning now to the inflammatory reactions produced by micro-organisms, the partiality of certain organisms for certain tissues is well recognised The staphylococcus is the common infecting organism in the acute lesions of the skin and in osteomyelitis; the pneumococcus affects the lung; Pfeiffer's bacillus attacks particularly the mucous membrane of the respiratory passages, as also does the diphtheria bacillus. One of the most striking examples is the distribution of the three main types of meningitis—the streptococcal and pneumococcal, the meningococcal, and the tuberculous Equally remarkable is the localisation of the typhoid bacillus in the lymph follicles of the intestine And many other examples could be quoted. Sometimes, it is true, other factors than those specific to the organism determine the localisation of an infection. *Gas* gangrene, for example, is a disease of muscle because it is only in muscles that the organisms are able, as a rule, to develop, not because they prefer muscles to other tissues; the localisation of the *disease is determined* by mechanical factors Again, the atypical distribution of organisms in the body is quite common; the gonococcus and Pfeiffer's bacillus may cause ulcerative endocarditis, and the typhoid bacillus periostitis But, broadly speaking, the rule holds good; there is a definite determination of certain organisms to certain tissues. It is possible to talk of the organisms of *osteomyelitis*, of anterior and

and easily recognisable as due to some special agent Others have so many features in common that it is only with great difficulty that one type can be distinguished from another, and before we can hope to analyse the mass of lesions with which we are confronted, it is necessary to appreciate what are the basal features of the process In every text-book of pathology chapters are devoted to inflammation in general and I do not propose to cover the ground again at all formally, nor to enter into such sterile controversies as to whether repair should be included as part of the process. and whether the name should be reserved for purely local reactions It is useful to recognise four inflammatory stages the initial injury, the immediate vascular reaction, the exudation, and the stage of repair These stages, of course, pass insensibly one into the other and they may be, and frequently are, coexistent, on the other hand, they may vary considerably in intensity and are at times so slight and transient as scarcely to be recognisable The actual initiation of the process may be due to innumerable causes, simple trauma, metabolic products, products of cell disintegration, chemical and physical agents, and micro-organisms may all lead to a chain of recognisable reactions But exactly how any one of these agents acts is a matter difficult to determine, it is, indeed, the great problem of infection It is rarely possible even to be certain that a single cause is operative at any one time, the majority of inflammatory reactions are due to or are aggravated by more than one cause Bacterial infections, for example, are accompanied in the earliest stages by cell destruction, and the course of the reaction is profoundly modified thereby There is ample evidence to show that the simple presence of an organism, though it must necessarily be followed by an inflammatory reaction, however mild and transient, need not give rise to clinical infection, but infection occurs, probably with much greater frequency than we are aware, when the process is modified by another factor favourable to the organism The carrier problem is explicable only in this way, as is also auto-infection The importance of accessory factors will become clear when we have occasion to discuss experimental infection.

The Vascular Changes

The cardinal signs of inflammation, redness, swelling, and heat, are so obviously associated with local alterations in the blood-supply of the part affected that it is little to be wondered at if the vascular changes in inflammation have occupied a dominant place in pathological teaching Though, as Prof William Bulloch has reminded us, to two Englishmen, Augustus Volnay Waller and William Addison, belongs the credit of having first described what happens in the blood-vessel of inflamed tissue, it is from the classical work of Cohnheim that our knowledge of this aspect of inflammation is derived The sequence of changes as they occur in semi-transparent tissues such as the tongue or the mesentery of the frog have been described by him for all time, and it behoves all students of pathology to repeat at least once in their lives his observations By no other method can the dilatation of the vessels the primary acceleration and later retardation of the blood flow, the margination and emigration of the leucocytes, and the final stagnation of the current, be appreciated so strikingly But having once performed this dramatic experiment, the student may revert with more profit to ordinary fixed and stained histological material

For Cohnheim the whole story of inflammation could be read in the blood-vessels He writes "inflammation is the expression and consequence of a molecular alteration in the vessel walls", and so great was the weight of his authority that for years his teaching was widely accepted There has later been a tendency for the pendulum to swing rather too far in the other direction We know that the vascular changes are not the essential feature in inflammation The classical researches of Metchnikoff and his school established the fundamental nature of the cellular reaction in the lower animals In the higher animals inflammation may occur in non-vascular tissues, and even in tissues with a rich circulation the vascular changes vary in degree and in time of onset Krogh, for example, has drawn attention to the characteristic lag in the vascular reactions in inflammation brought about by light and by abrin, and there can be no doubt that in many inflammations tissue changes are in progress before any alteration occurs in the blood-vessels Nevertheless, the vascular reactions on which depends the exudation of fluids and cells are highly important in modifying the inflammatory process, and, as I shall hope to show, the specific nature of the response to many injurious agents is determined by the changes occurring in the vessels of the part As to the mechanism of the vascular dilatation, the exudation of fluid, and the alteration in the rate of blood flow, there is much yet to be explained, though of recent years a good deal of light has been thrown on the subject. From the descriptions in many text-books one might form the opinion that the flushing of the inflamed part with blood and the outpouring of large quantities of lymph were invariably beneficial processes, were, in fact, intelligent responses on the part of the tissues of the organism As a matter fact, they are nothing of the kind. They do not depend at all on nervous influences, but are local reactions to local injuries They are, as Cohnheim said, manifestations of a molecular alteration in the vessel wall From the work of Krogh and his colleagues, we know that the capillaries are actively contractile tubes, which respond by dilatation or contraction to different stimuli Also, we know that the passage of fluid from the capillaries is greatly increased when they are dilated The dilatation of the arterioles, the capillaries, and the veins is due to the paralysis of the contractile elements of their walls, and the degree of engorgement in inflammation depends upon the nature of the agent producing the inflammation, its concentration, and its diffusibility It is interesting and important to note that products of protein degradation are capable of producing vaso-dilatation, for this may explain the delayed engorgement occurring in certain reactions, and it enables us to appreciate how multiple factors may be concerned in an inflammatory process. The determination of leucocytes to the part is nearly always beneficial, especially in the microbic infections, but even this expression of activity may be ill-advised, for the presence of phagocytes may not only determine an infection, but may also contribute to its generalisation It has been believed, for example, that the development of tetanus in experimental animals after the injection of tetanus spores combined with other substances is due to an inhibition of phagocytosis In some unpublished work carried out some years ago, Dr W E Gye and I found that tetanus can develop in spite of the most remarkable accumulation of leucocytes and the most intense phagocytosis There is in other directions plenty of evidence to show that phagocytosis by no means necessarily implies the death of the phagocytosed organism The fluid of the exudate also acts beneficially in the majority of cases, but again I wish to insist that it is not poured out as part of an intelligent attempt to combat the infection It is forthcoming because of certain alterations brought about in the tissues and vessels of the part by the agent which initiates the process The intensity of the œdema and the characters of the fluid must necessarily vary with the agent in question, In anthrax, for example, the characteristic feature of the lesion is the intense inflammatory œdema but with avirulent strains of this organism the fluid part of the exudate is diminished, whereas the cellular constituents are notably increased Later I shall bring forward evidence to show that an inflammatory œdema artificially produced may affect an infectious process very adversely

I shall not attempt to enter into any discussion about the types and origin of the cells of the inflammatory exudate—the literature of this subject is immense so much so, in fact, that the main facts are in danger of becoming completely obscured by a mass of detail There is no doubt that in the future the cellular study of inflammation will prove to be of the first importance, but much work remains to be done before we shall be able to see our way clearly All I can do here is to indicate the more significant facts when discussing individual types of inflammation, though, in passing, I would note that the polynuclear leucocyte is not necessarily the earliest or the most important cell taking part in the reaction , the fixed connective tissue cells and the adventitial cells also play their part

INFLAMMATORY REACTIONS TO NON-BACTERIAL AGENTS

Although bacteria are the most important of the agents which may initiate inflammation, so much so that in our thoughts inflammation and infection are almost synonymous terms, highly instructive reactions may be brought about by other means It will not be possible to deal at all exhaustively with these non-bacterial reactions, but only to select especially two or three which have a direct application to the bacterial infections to be reviewed Moreover, even in these selected examples, only general features can be dealt with, for even the mere anatomical differences in the tissues of the various experimental animals cause variations in the lesions produced

Inflammation due to (1) Calcium

One of the most constant and striking of the chemical inflammations is that produced by calcium It has been studied and clearly described by Bullock and Cramer I have mostly used mice for the study of this reaction, but have satisfied myself that calcium inflammation in other animals is comparable to that in the mouse When calcium chloride in quantities of 5–10 mg or less is injected into the subcutaneous tissues of mice an inflammatory reaction is noticeable in a few hours and fully developed in 24 Its most striking feature is an intense jelly-like œdema which extends widely and is accompanied by considerable congestion In time the œdema disappears, though it may last for three days or more, but the congestion persists for considerably longer Healing takes place with the formation of vascular adhesions between the skin and the thoracic and abdominal walls Microscopically the lesion shows, in addition to the œdema, intense dilatation of the blood-vessels with occasional hæmorrhages, and a considerable exudation of leucocytes Hyaline thrombi are often found in the dilated vessels, possibly as the result of the widespread damage to the endothelium of blood and lymph vessels. Other evidence of tissue destruction is seen in the degeneration and even the necrosis of the muscle-fibres in the neighbourhood, and the skin is sometimes ulcerated The actual degree of tissue destruction, however, is scarcely appreciated till it is rendered more obvious by the subsequent process of repair The characteristic features of the reaction, then, are diffuse necrosis of tissue, varying with the intensity of the dose, pronounced congestion and an abundant inflammatory exudate of which the fluid constituent is particularly prominent In fact, the calcium reaction is apparently chiefly due to derangements of the local circulation

(2) *Silica*

An even more striking inflammatory process is that produced by silica If this substance is injected into the subcutaneous tissues of mice a sequence of changes occurs which progresses for several days Gye and Purdy have shown that silica is primarily an endothelial poison, but in concentrated doses of 5–10 mg the vascular effect is not nearly as pronounced as with calcium. The lesion is primarily a destructive one, consisting of a coagulation necrosis of the tissue and the serum poured into it Within a few hours of the injection it can be recognised as a zone of necrosis, quite acellular, except for a few leucocytes at the periphery Beyond it for some distance the capillaries are dilated and engorged and present active margination and emigration of leucocytes. These polymorph leucocytes surround the necrotic zone, forming a dense band of cells which become necrosed themselves Within three days a lesion is produced, so characteristic as to be specific It consists of a central necrotic area surrounded by a zone of leucocytes, most of which are themselves undergoing destruction Outside this there is a secondary area of necrosis, which is bounded by granulation tissue In course of time the lesion inspissates and becomes invaded by macrophages, and the final picture is that of an organising inflammatory fibrosis

The extent of the silica lesion naturally depends on the dose administered, but it always tends to be strictly localised in contrast to the widespread effect of the calcium lesion The reaction brought about by different forms of silicon, is, as I shall hope to show, a matter of considerable practical importance

(3) *Turpentine*

Turpentine causes a local inflammation which appears to combine to some extent the features of the calcium and the silica lesions In addition to a pronounced vascular reaction, it causes tissue necrosis and a most intense accumulation of leucocytes The abscess then formed spreads by the death and solution of the leucocytes and the determination of fresh cells to the part The removal of the irritant must be a slow process, for tissue destruction continues for a considerable time, and the extent of the lesion, when compared with that produced by calcium and silica, is out of all proportion to the amount of the poison administered. Healing is naturally slow, and when it is finally achieved, is accompanied by a pronounced degree of scarring.

(4) *Inert and Insoluble Substances*

Certain inert and insoluble substances also produce easily recognisable lesions in the tissues A feature common to most of them is the foreign body giant cell, a syncytial mass which surrounds the foreign substance All who have had much experience of surgical pathology must have seen many instances of this reaction around ligatures embedded in the tissues Cholesterin, as Matthew Stewart has shown, is another common cause of the foreign body type of reaction, and rather similar lesions may be produced experimentally by aluminium oxide

INFLAMMATORY REACTIONS PRODUCED BY MICRO-ORGANISMS

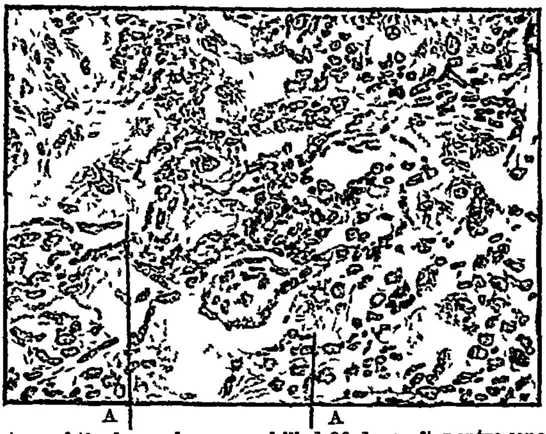
Tissue Predilections

Turning now to the inflammatory reactions produced by micro-organisms, the partiality of certain organisms for certain tissues is well recognised The staphylococcus is the common infecting organism in the acute lesions of the skin and in osteomyelites, the pneumococcus affects the lung; Pfeiffer's bacillus attacks particularly the mucous membrane of the respiratory passages, as also does the diphtheria bacillus One of the most striking examples is the distribution of the three main types of meningitis—the streptococcal and pneumococcal, the meningococcal, and the tuberculous Equally remarkable is the localisation of the typhoid bacillus in the lymph follicles of the intestine And many other examples could be quoted. Sometimes, it is true, other factors than those specific to the organism determine the localisation of an infection Gas gangrene, for example, is a disease of muscle because it is only in muscles that the organisms are able, as a rule, to develop, not because they prefer muscles to other tissues; the localisation of the disease is determined by mechanical factors Again, the atypical distribution of organisms in the body is quite common , the gonococcus and Pfeiffer's bacillus may cause ulcerative endocarditis, and the typhoid bacillus periostitis But, broadly speaking, the rule holds good , there is a definite determination of certain organisms to certain tissues It is possible to talk of the organisms of osteomyelitis of anterior and posterior basal meningitis, of fibrinous pneumonia, of membranous croup, and so forth. And—and this is the important point—nine times out of ten we shall be talking of a specific organism.

Specific Histological Lesions

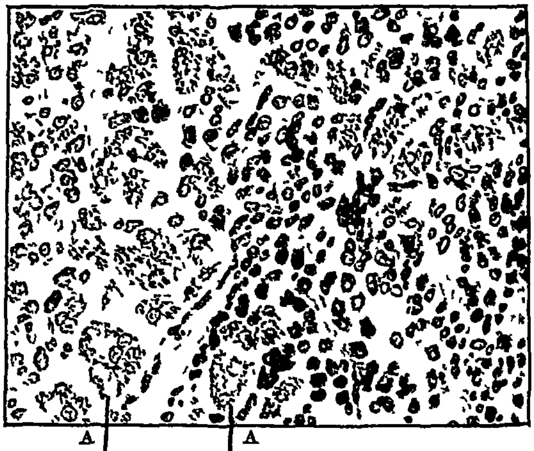
If it is possible to classify organisms in this rough-and-ready way along purely anatomical lines, it is much easier to do so by resorting to histology. The tubercle bacillus characteristically attacks the lungs, and so well recognised are the pulmonary lesions it produces that there is seldom any difficulty in distinguishing them from those brought about by other organisms. But the tubercle bacillus also attacks the skin, the bones and joints, the alimentary canal, lymphadenoid tissue, the genito-urinary system and serous membranes. Indeed, so catholic are its tastes that it defeats any attempt to force its lesions into an anatomical classification. Microscopically, however, the lesions it produces in the tissues are almost pathognomonic. They vary, of course, between cell destruction on the one hand and cell proliferation on the other, but the fundamental tissue changes brought about by the tubercle bacillus are so characteristic that the presence of the organism can nearly always be diagnosed from a microscopic examination of the lesion. Further, it does not matter what type of tubercle bacillus it is, the essential lesions are the same whether they are caused by the bovine or the human type of organism. One may even go further and recognise a type of tissue reaction brought about by the pathogenic members of the great acid-fast group of bacilli, for the lesions of leprosy, though easily distinguishable, are essentially very much like those of tuberculosis. Such differences as exist seem to be due much more to a greater virulence of the tubercle bacillus than to fundamental differences between the organisms. An even more striking illustration of this conception is seen in the organisms pathogenic in the intestinal tract. Morphologically the various Gram-negative non-lactose fermenting bacilli are very much alike, and though some of them are easily distinguished from one another by cultural tests, attempts at a still finer differentiation have landed us in rather a difficult position. If, however, we resort to a pathological diagnosis, it becomes apparent that we have to deal with two main groups, the typhoid and the dysenteric. It is, I think, extremely important that organisms so closely allied morphologically and culturally as the typhoid and the dysentery bacilli should produce such different lesions. It is surely more significant that organisms so closely resembling each other should cause diametrically opposite reactions in the tissues of the host than that organisms giving rise to essentially the same changes in the intestine should exhibit minor serological and cultural differences. I do not wish to minimise in any way the importance of bacteriological observations in these diseases. Inasmuch as most of the patients survive their infections, and their lesions never come under observation at all, accurate diagnoses can only be made with the help of the bacteriologist, and from the epidemiological and public health points of view an accurate bacteriological diagnosis is of the first importance. But a true understanding of a disease with, it may be hoped, the development of rational methods of combating it can only be arrived at by the study of the disease process, and it is for this reason that one would be glad to see at least as much attention devoted to the lesion as is lavished upon the microbe.

FIG 1.



Section of the lung of a mouse killed 90 days after intravenous inoculation with human tubercle bacilli. Note the persistence of bacilli in the macrophages (A) and the absence of necrosis or inflammatory reaction.

FIG 2



Section of a human spleen from a case of leprosy. Note the presence of bacilli in the macrophages (A) and the same absence of necrosis or inflammatory reaction as is seen in Fig 1.

LESIONS ATTRIBUTABLE TO VARIOUS ORGANISMS

Pyogenic Cocci.

An exhaustive dissertation on pathological histology would be wearisome, even if justified by accurate knowledge, and I am only too well aware that my appreciation of the differences in the various bacterial inflammations is still superficial. Still less do I know what these differences may mean. Some features, however, may prove to be significant, and to these attention should be directed.

It is unfortunate from our point of view that the lesions of the pyogenic cocci, the staphylococci, and streptococci, which are responsible for such a high proportion of infections, should be so difficult to analyse. They both give rise to acute reactions characterised by the typical vascular changes and the accumulation of vast quantities of polynuclear leucocytes, and more often than not it is impossible to distinguish histologically a staphylococcal lesion from one due to a streptococcus, though the anatomical distribution of the disease may be of some guidance. For the most part the staphylococcal lesions tend to remain more localised than the streptococcal. The organisms are not distributed so diffusely through the lesion, but tend to accumulate in the centre. There is a pronounced determination of leucocytes to the affected area, and the abscess then formed tends to enlarge by the death and solution of the older cells and the peripheral accumulation of new comers. In favourable cases the organisms die and the lesions are healed in the usual way by solution and phagocytosis of the pus and the activity of peripheral granulation tissue. The streptococcus tends to affect mucous membranes, and the lesions it produces are much more variable. As a rule the exudate contains more fluid and there is less tendency to localisation. The organisms tend to spread widely through the tissues, especially in lymphatic spaces, and the whole process is usually more rapid A remarkable reaction is that seen in erysipelas, when an intense infiltration of the tissues with cocci is accompanied by much fluid exudate in the looser tissue, and an accumulation of mononuclear cells rather than polynuclear leucocytes I can say little of the numerous reactions supposed to be due to variants of the *S viridans*, but the type of endocarditis due to streptococci has remarkable features (vide infra)

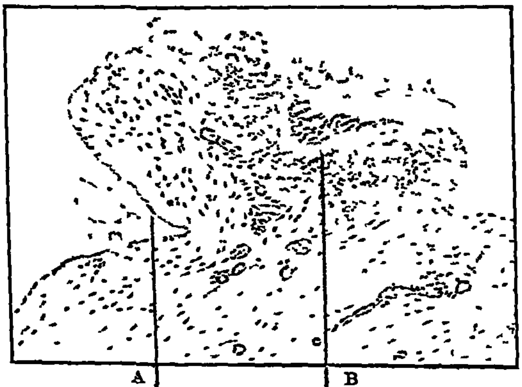
The Pneumococcus

The pneumococcus gives rise to its most characteristic lesions in the lung The macroscopic appearance of the pneumococcal pneumonia is highly distinctive, and microscopically the lesions are as easily recognisable The vascular reaction is as pronounced as in the streptococcal and staphylococcal lesions, but the typical feature is the outpouring of an abundant fluid exudate extremely rich in coagulable protein The names croupous and fibrinous pneumonia are, of course, an expression of this peculiarity In the early stages of the disease the pulmonary alveoli become filled with a meshwork of fibrin in which are entangled the cells of the exudate, red blood corpuscles, polymorphs, and also mononuclear cells, and later on, although the wandering cells become a more conspicuous part of the reaction, the fibrin is always prominent In extra pulmonary lesions the reaction may be modified, though it is always characteristic in pneumococcal infections of the serous membranes And although a fibrinous exudate occurs in other infections, it is so particularly characteristic of the pneumococcal lesions as to place them in a distinct histological class

Gonococcus and Meningococcus

Two other micrococci, the gonococcus and the meningococcus, must be mentioned, because in their reactions phagocytosis plays such a prominent and significant part Phagocytosis of the causative organisms by the cells of the exudate is, of course, a commonplace in many infections, but in these two infections it is unusually obvious In the later stages of both these diseases many of the organisms are free in the exudate, but in the early stages they are nearly all intracellular The characteristic feature is that they are not universally distributed throughout the cells of the exudate, but are limited to occasional cells in which they occur in large numbers It is impossible to avoid the conclusion that the organisms are actually proliferating within the bodies of the phagocytes Phagocytosis in these diseases would appear to be less of a defensive mechanism than an aid to infection. It may explain how the meningococci pass from the throat to the meninges And it is quite possible that the deposition of gonococci by phagocytes in the submucous tissue of the urethra may determine the chronic inflammatory changes which result in the formation of strictures

FIG 3

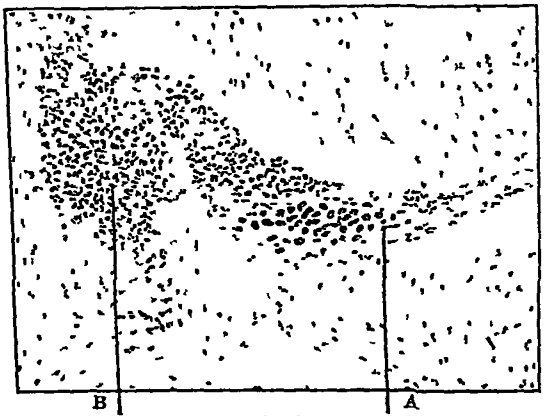


Section of heart valve showing a rheumatic endocarditis with a simple vegetation (A) and a superimposed streptococcal infection (B)

Diphtheria Bacillus

The diphtheria bacillus is not the only organism, or, indeed, the only irritant which can cause a membranous inflammation of mucous membranes, but the reactions it calls forth are highly characteristic and, in established lesions, can scarcely be mistaken for anything else In the early stages of the infection there is necrosis of the cells of the covering epithelium and pronounced vascular reaction, with the outpouring of large quantities of coagulable fluid exudate Many leucocytes appear at first, but they tend to undergo necrosis, and in the later lesions the exudate contains few cells In the fully developed lesion the mucosa is entirely necrotic and replaced by a thick inflammatory membrane consisting of coagulated protein and containing few cells The surface of the membrane is covered with large numbers of the bacilli, but these are quite superficial and do not penetrate into the deeper tissues Beneath the exudate the submucosa is intensely congested, œdematous, and infiltrated with moderate numbers of leucocytes

FIG 4



Section of human heart muscle showing an Aschoff node (A), together with an acute abscess (B) From the case of subacute infective endocarditis superimposed on acute rheumatism shown in Fig 3

Anthrax Bacillus

Anthrax is another infection in which the initial lesion has characteristic features depending on the type of inflammatory reaction called forth The vascular reaction is pronounced, there is an abundant accumulation of leucocytes, and, above all, a pronounced exudate of serous fluid which passes into the epithelium and causes the typical ring of blisters Unlike the diphtheritic or pneumococcal exudate, this fluid shows little tendency to coagulation, and fibrin formation is not a characteristic feature of the anthrax lesion The bacilli are present in numbers throughout the lesion, and though even in the advancing zone there are plenty of leucocytes, phagocytosis is not, *in my experience, a prominent feature* In the older part of the lesion, where there is much necrosis and vast numbers of leucocytes accumulate, there is, it is true, considerable phagocytosis, but it seems to have no influence on the infection, and it would appear that the intense serous exudate prevents any limitation of the bacterial growth

Anaerobic Bacilli

A group of organisms which cause highly specific lesions are the anaerobic bacilli, *B welchii*, *B œdematiens*, and *V septique*, the bacilli of gas gangrene Although at one time it was thought that these bacilli had a specific action on muscle, this does not appear to be true These organisms thrive best in deep, penetrating wounds, and in the limbs such wounds involve muscle Wounds of the abdominal and thoracic viscera are either fatal or receive operative treatment from considerations other than the occurrence of gas gangrene, but were these organs of less immediate importance to the life of the individual, there is no reason to suppose that the incidence of gas gangrene would not be as high in them as in wound of muscle

The characteristic lesion of the gas gangrene bacilli is necrosis, brought about by their toxins The tissues affected pass through the stages of cloudy swelling to coagulation necrosis and solution with the formation of gas The most highly organised tissues are affected first, but eventually the blood-vessels and connective tissues are also destroyed The organisms are present in enormous numbers in the connective tissue, and do not invade the other structures, except perhaps when necrosis is far advanced In an infected muscle they tend to remain within the limits of the epimysium, and they extend to neighbouring muscles by spreading in the subcutaneous tissue or in the deep connective tissue trabeculæ The most striking feature of the lesion is the entire lack of any inflammatory reaction The tissues are absolutely quiescent, and though there is some slight serous exudate, wandering cells are entirely absent In the cutaneous and subcutaneous tissues there may be an abundant exudate of polynuclear leucocytes which are actively phagocytic, but there is nothing of this kind in the muscles or viscera In human material I have never been able to demonstrate any differences between the reactions of these three bacilli, but J McIntosh has published beautiful figures showing that in the guinea-pig it is possible to distinguish the infecting organism from the naked-eye appearance of the lesion

Streptothrix.

As a rough and ready rule one regards as acute inflammations those in which the cellular exudate consists of polynuclear leucocytes, and chronic inflammations those in which the mononuclear elements predominate The streptothrix infections form an interesting exception to this rule In actinomycosis the fungus causes necrosis of tissue and an abundant exudation of polynuclear leucocytes, which surround the tangled masses of the mycelium But instead of a large confluent abscess, such as one sees, for example, in amœbic infections of the liver, each small focus becomes surrounded by active granulation tissue, which in turn is enclosed in dense connective tissue The foci enlarge and ramify by solution of the tissues, but destruction is always accompanied by the peripheral fibrosis, and in this way the characteristic honeycomb lesions are produced Although the disease is extremely chronic, the mononuclear-celled reaction that is seen in tuberculosis or syphilis does not occur And even in old foci, in which the mycelium is for the most part dead, there is complete absence of the giant cell phagocytes which might be expected.

Typhoid and Dysentery

In their morphology and in their biological properties the bacilli of the typhoid and the dysentery groups are so alike that one would expect them to cause lesions of a similar nature But, on the contrary, they differ in their effects on the tissues about as widely as they possibly can The dysentery bacilli attack primarily the intestinal mucosa and give rise to a diphtheroid exudate with widespread ulceration and destruction of the mucous membrane There is intense vascular reaction in the submucosa, but the condition is more or less localised to the intestine, there is no septicæmia and no involvement of the spleen The bacilli of the typhoid group, on the other hand, affect primarily lymphadenoid tissue The organisms become septicæmic and lesions occur in the skin and other organs, but the brunt of the infection falls on the lymphadenoid tissue of the intestine, the spleen, and the mesenteric glands The intestinal ulcers are not due to direct involvement of the mucous membrane, but are secondary to processes occurring in the underlying lymph nodes. Again, though enteric fever is an acute infection, the polynuclear leucocyte takes no part in the inflammatory reaction, indeed, typhoid fever is one of the acute diseases in which there is a leucopenia.

Syphilis

Of tuberculosis and syphilis very little need be said. Syphilis is so protean in its manifestations that it would seem to defy analysis, and, indeed, it is one of the most difficult of the infections to interpret histologically It presents, however, certain remarkable features which are quite outstanding The primary lesion is characterised by an enormous proliferation of the specific organism, with appropriate staining the chancre can be shown to be packed with spirochætes, which are not phagocytosed but lie free in the tissues. At the same time there is remarkably little tissue destruction, and it is, of course, notorious that unless secondary infection supervenes, the primary chancre heals with little scarring Occasionally small foci of necrosis occur, and these are usually infiltrated with polynuclear leucocytes, but for the most part the reaction consists of a dense accumulation of mononuclear cells, lymphocytes, and plasma cells, and a proliferation of the fixed connective tissue elements In the later stages of the disease exactly the reverse occurs Here tissue destruction is prominent, but organisms are very difficult to demonstrate One of the most remarkable features of syphilis is its extreme chronicity It may persist, apparently latent, for years, producing little change except a mild fibrosis of most of the viscera which acquires importance simply because it is progressive It is possible that many of the late manifestations of syphilis are unrecognised as such, but the characteristic fibrosis of the testicle, and the even more characteristic chronic aortitis affecting the ascending aorta, are familiar findings in the post-mortem room.

Tuberculosis.

The macroscopic and microscopic lesions of tuberculosis, or at any rate the more usual types, are so familiar that they need not here be described, but certain points may be stressed The more tuberculosis is studied the more it appears to be a phagocytic disease Once the disease is firmly established in the body diffusible toxins no doubt play a leading part, but I can hardly imagine infection to be possible in the absence of phagocytosis Further, the tubercle bacillus may almost be said to be a disease of a particular system of cells, the mononuclear phagocytes which are now usually grouped together under the name reticulo-endothelial system. It is possible that polynuclear leucocytes may pick up tubercle bacilli as they may pick up any other foreign substance, and I have occasionally seen these cells present in very acute tuberculous lesions, but for the most part the pathogenicity of the tubercle bacillus is closely bound up with the reticulo-endothelial system.

In the more acute destructive lesions the bacilli may be present in such enormous numbers that the tissues seem to serve as a veritable culture medium, but in the more chronic lesions bacilli may be few and far between In fact, there seems to be very often a fairly equal balance between the pathogenicity of the bacillus and the resisting powers of the tissues; a very little will turn the scale either way And this is particularly well seen in the infections of animals which are almost immune Tubercle bacilli introduced into the tissues of an animal such as the mouse are able to establish themselves to a certain extent, but they do this with the least possible inconvenience to the host They are phagocytosed, and they appear to proliferate within the phagocytes, but they seem to exert little or no toxic action, the whole process suggests an almost perfect symbiosis And in the study of tuberculosis in the mouse one cannot fail to be reminded of leprosy in the human being Here occurs the same intense phagocytosis and bacilli are symbiotic within the phagocyte, with, especially considering the numbers of the infecting organisms, the minimum of disturbance to the host (Figs 1 and 2) Leprosy, indeed, can scarcely be distinguished histologically from tuberculosis as seen in the naturally immune animal It is merely an infection by an organism of the great acid-fast group, but one of an extremely low virulence

The Histological Lesion as an Aid in Determining Ætiology

Turning for a moment to another side of the question an interesting feature of the histological aspect of infection is the influence it has on establishing the causal agent of a disease

Acute Rheumatism.

The ætiology of acute rheumatism, one of the most important crippling diseases, is still unknown, though from time to time many organisms have been brought forward as the cause One of the most convincing of these was the rheumacoccus of Poynton and Paine, and at one time I was prepared to accept it partly, perhaps, because I was rather biased in its favour, but chiefly because I was not conversant with the histological lesions of rheumatism It is now generally agreed that the Aschoff node is the essential lesion of acute rheumatism In the myocardium it consists of a small focus situated in the interstitial connective tissue, usually in relation to a small vessel The nodes are multiple and consist in the acute stage of aggregations of large cells of the endothelial type some of which may be multinucleated and mononuclear wandering cells The older lesions tend to shrink down and are eventually represented by minute foci of fibrous tissue These Aschoff nodes are quite unlike any coccal lesion with which we are familiar The difference between the two reactions becomes obvious when, as occasionally happens, they occur simultaneously (Figs 3 and 4) In the case illustrated in Figs 3 and 4 a streptococcal infection was superimposed on an acute rheumatic carditis, and histological examination revealed two distinct types of lesion A mitral cusp showed on one side a typical rheumatic thrombus vegetation with the deeper mononuclear-celled reaction, and on the other an area of ulceration with a polynuclear-celled infiltration and numerous cocci, and a fortunate section through the wall of the left ventricle showed a characteristic Aschoff node lying in actual contact with a small acute metastatic abscess Until an organism can be shown to be capable of causing the Aschoff lesion experimentally, we shall have to continue our search for the organism of acute rheumatism

Forms of Encephalitis

Another instance of the same kind is seen in certain cases of encephalitis The histology of encephalitis lethargica is rather complicated and difficult, but it will generally be agreed that its most constant features are, first, the accumulation of mononuclear cells in the adventitia of the vessels of the affected area, forming the so-called cuff, and secondly, the absence of any glial softening in these areas On these points alone it is possible to make a diagnosis in all but the most unusual cases In the last few years a good deal of attention has been devoted to a form of encephalitis following, or at any rate associated with, vaccination The number of cases of post-vaccinal encephalitis is exceedingly small in comparison with the total number of vaccinations, nevertheless we cannot afford to neglect them It has been suggested that they are really cases of latent encephalitis lethargica which have been lightened up by the vaccination, but the lesions, though not unlike those of encephalitis lethargica, differ in these respects, at least in the only two cases I have seen There is no perivascular cuffing and there is considerable glial softening That the lesions are sufficiently distinct to suggest a distinct disease is the opinion of such experienced and cautious observers as Prof H. Turnbull and Prof J. McIntosh One must admit that there exists a strong body of opinion opposed to this view, but many diseases have been accepted as entities on much less evidence than we have in the peculiar histological appearances of post-vaccinal encephalitis

RHEUMATISM IN CHILDHOOD.

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In the course of an investigation into the relation between social conditions and acute rheumatism in children, carried out by the writer for the Medical Research Council, certain features were noted incidentally, which whilst having no direct bearing on either the causation or the prevention of the disease, and therefore not embodied in the Report,[1] are thought nevertheless to be of sufficient interest to record here

Whilst engaged on this work under the direction of Dr G F Still at the Hospital for Sick Children, Great Ormond-street, London, the writer examined, together with their entire families, 121 cases who were under treatment for rheumatism or had been some time previously, in the selection of these cases only those were taken with quite definite manifestations, nothing apart from chorea, rheumatic carditis, and rheumatic fever, acute or subacute, being accepted All except two of the patients and 35 out of the 242 parents and 318 siblings were actually examined.

A social investigation of these families carried out by Miss Little grouped them into three classes, which were roughly as follows —

Class A —Families having a certain margin over bare necessities, the fathers earning generally up to £4 a week or more

Class B —Fathers belonging mainly to semi-skilled and the more stable unskilled workers earning £2 5s to £3 10s per week but having no margin for anything beyond the bare necessities of life

Class C —Families with means generally below subsistence level and, generally speaking, of the lowest social grade.

Under this grouping the families were found to be distributed as follows —

Class A	16 families
„ B .	77 „
„ C	28 „

A very similar distribution was found in the much larger series of cases investigated at the same time by workers at St Thomas's Hospital, and it is concluded in the report that " contrary to expectation, a comparatively small proportion of rheumatic cases came from families belonging to the lowest and poorest classes " This statement is above contradiction, but does it follow therefore, as is assumed, that the " poorest class of hospital patient shows a lower incidence of rheumatism than the other two " ? In a series of 100 control families from St Thomas's Hospital the distribution was much the same into the three classes, and it would seem simply that there are fewer families amongst our London population to be grouped under " C " than under " B " Would we not get very different figures if, instead of starting with a certain number of rheumatic patients and classifying their families into social groups, we took an equal number of families from each group and then ascertained the incidence of rheumatism amongst them ?

Incidence of the Disease in Relation to Poverty

A certain amount of light might be expected here on considering the percentage of contacts found to be affected with rheumatism in the three social classes in the families of the rheumatic patients investigated ; and in this connexion the St Thomas's workers found amongst the brothers and sisters over 2 years of age of their rheumatic patients 16 per cent in class A, 12 per cent in class B, and only 10 per cent in class C ; very different figures, however, were arrived at from the writer's series as is shown in the following table

This would seem to indicate that the incidence increases pari passu with poverty That better social conditions would go a long way towards eliminating the rheumatic child is shown by the examination of nearly 2000 inmates of Poor law residential schools carried out by the writer for the Medical Research Council, when only 1 per cent of the children were found to be rheumatic This is a very low figure compared with the incidence found in the elementary schools of the education authority, which is stated variously as 2 4,[2] 4 8,[3] and 5 2,[1] and is even more striking when one considers that several of these children going to form the 1 per cent. had undoubtedly been affected with rheumatism prior to entering the schools Rheumatism occurring de novo in these institutions is an absolute rarity as was seen by a perusal of the sickness records At Sidcup homes only two cases of chorea and five cases of acute rheumatism occurred in 22½ years during which time 4198 children had passed through. The schools at Anerley have only had three or four cases of rheumatic fever in 17 years out of about 4000 children, whilst 12 cases of chorea have been noted there in the last 12 years out of 2361 inmates The medical officer of the Ongar homes gave the writer similar remarkably low figures, he could only recall three cases of chorea since 1908, when the homes were first opened, during which time he had seen 2000 children, and he could not recall a single case of acute rheumatism developing without a previous history of similar trouble prior to admission

Incidence of Rheumatism amongst the Exposed Persons (Parents and Living Brothers and Sisters Aged 4 Years and Over)

Class	Number of exposed persons	Cases of rheumatism	Percentage affected
A	83	5	6 0
B	330	30	9 0
C	109	13	11 9

It is the writer's experience that the severity and general prognosis of the disease is influenced adversely by the degree of poverty, and some of the following facts concerning the original 121 patients are written partly in an attempt to bear out this contention.

Sex.—There were 75 females and 46 males

Age at Onset.—The average age of the patient at the onset of the disease was difficult to ascertain with anything like accuracy, and was much the same in each of the three social classes, yet the figures denote a slightly earlier onset in the poorer, less cared-for children, thus —

Class	Number of patients	Average age at onset
A	16	8 2 years
B	77	7 5 ,,
C	28	7 2 ,,

The average age of the children at the time of investigation was 10 9 years

Joints—Just over half the total number of cases had at some time definite joint pains, whilst in 29 per cent of the total this was associated with swelling and pyrexia

Carditis—In 81 cases (67 per cent) the heart became definitely involved at some period of the illness, mitral endocarditis was the most commonly found lesion, being present in 68 instances, combined aortic and mitral disease was noted on four occasions, whilst pure aortic disease was met with once only In eight cases it was thought that myocarditis was present without any valvular defect Extensive pericarditis was present in five instances, of these one was first diagnosed at the time of the investigation, the other four presented themselves at an average of three years from the date of onset of gross involvement of the pericardium, and three were apparently quite fit without complaints and with hearts reacting well to exercise Three of these five cases of pericarditis were from "C" families, though as stated above there were only 28 families in this class altogether

Throat Conditions—These have been very completely dealt with in the report, and the cautious comment that "complete removal of the tonsils does not appear to afford absolute protection from attack by rheumatism" would appear to be fully justified It was not very uncommon to find perfect enucleation of the tonsils had been carried out some considerable time before the onset of symptoms, and it was also interesting to note that removal of tonsils by no means stopped the rheumatic process developing once it had laid its grip on the child, and the writer has seen hearts becoming much worse and even involved de novo following the operation of tonsillectomy

Chorea—At least one attack of chorea had occurred in 82 children (68 per cent) One case had as many as seven distinct and separate attacks Taking into consideration the fact that it was not possible to ascertain definitely the number of recurrences—as some patients were "always having them" or were "never free"—the average number of attacks per patient was found to be almost two, so that a child once having had chorea is fortunate if he or she does not get it again. It is interesting to compare the prognosis of children with chorea falling into class C families (bad) with those in class A (good), for whereas those coming from good families only occasionally had a second attack it was almost the rule for those from the poorest surroundings to have a recurrence and many of these were the children who were "always having it" There were 69 instances in which chorea was the chief, or indeed the only, symptom first noticed and 28 (40 per cent) of these had developed, either at that time or subsequently, permanent heart complications Of 30 cases of chorea which started without the slightest suspicion of cardiac involvement, 5 (17 per cent) by the time of the investigation had developed this complication, and of 21 cases which started their choreic manifestations together with equivocal signs of heart disease—a slight enlargement perhaps or an occasional systolic bruit—such as often gives rise to considerable speculation as to the future welfare of the patient, 5 of these, nearly 25 per cent, had already developed a definite and permanent endocarditis, whilst in two others there was considerable doubt as to the integrity of the heart There was some indication that in this respect also children in the good (A and B) families fared better than their less fortunate brothers and sisters.

It was noted that whereas the combination of heart disease with rheumatic fever was frequent, it was distinctly uncommon to get chorea either during or following an attack of acute rheumatism without first getting cardiac involvement

Subcutaneous Nodules—During the course of the disease subcutaneous nodules were present in 19 cases (15 7 per cent); of the 19 children 17 were seen at a period averaging two and a quarter years after the first appearance of the nodules, and four of these were small under-developed children with big hearts and would probably not reach adult life, but the remaining 13 presented themselves looking fit and well with quiescent hearts and appeared as if they would grow up into fairly useful citizens.

Conclusions

(1) Rheumatism is a disease of poor people and the incidence of the disease may well be in direct relation to the degree of poverty. (2) Rheumatism is very rare amongst children of the poor classes when they are placed in the splendid environment of Poor-law homes (3) Once attacked, the poorer the child the worse the outlook (4) The prognosis of cases with pericarditis and subcutaneous nodules is not so bad as is generally supposed. (5) Whilst unable to point with anything like certainty to any one factor of poverty associated with rheumatism, and whilst being as yet entirely in the dark as to its real ætiology, it can be emphasised here in the words of Dr. Still that it is "by raising the standard of environment and improving the home conditions so that they approximate the well-ordered conditions found in such institutions as those in which rheumatism was found much less common—that we may hope to reduce the frequency of rheumatism in children"

References—1 Medical Research Council, Special Report Series No 111 (1927) 2 Hadfield L C C Medical Officer's Report, 1911 p 158 3 Williamson, C K Ibid, 1911, p 158. 4, Langmead, F S Ibid, 1910, p 135.

ORGANISATION AND THE RHEUMATIC CHILD

By MARGARET F LOWENFELD, M R C S Eng ,

LATE MUIRHEAD AND MEDICAL RESEARCH COUNCIL SCHOLAR FOR WORK ON RHEUMATISM IN CHILDHOOD

RHEUMATISM in childhood has been known since the early nineteenth century, but it is only within recent years that the numerical extent of the disease has been ascertained and its significance appreciated The position which now confronts us can be summarised as follows From the statistics of 1926, 500,000 of the school-children of the country are estimated to suffer from rheumatism, 10,000 of the children of school age in London are known to be rheumatic, and the vital statistics of 1924 showed that the deaths from heart disease exceeded those from either tuberculosis or cancer

This incidence of disease in the community has two consequences The first are the recurring periods of ill-health and loss of education to the child This is a feature difficult to realise and it is something of a shock to read in a recent report[1] that a quarter of the chronic ill-health of school-children of the country is estimated to be due to rheumatism The second effect is the adult carditis resulting from the disease The extent of this is indicated by the estimation that 60 per cent of rheumatic children ultimately develop heart disease These facts represent one of the many baffling problems confronting medicine to-day It is a problem, however, which is fortunately attracting considerable attention, and the past year has seen the publication of two authoritative reports concerning it and one containing suggestions with regard to its prevention It is the purpose of this paper to attempt to summarise the present position as regards our knowledge of the disease, and to examine the grounds upon which hope of control and of understanding may fairly be based

Three Main Facts

If the disease be considered as a whole, three main facts become evident The first is a marked lack of definition in the clinical outline Only a short time ago, acute and subacute rheumatic fever, chorea, tonsillitis, and carditis were held to cover the manifestations of rheumatism in childhood As these are well-defined conditions, the features of the disease appeared to be clear and easily recognisable But, within recent years, it has been argued that many forms of debility, anæmia, vague muscular pains, dyspepsias, and general irritability should also be considered as of rheumatic origin Furthermore, there is a good deal of evidence which goes to show that carditis can result equally from these as from the more definite forms of the disease, although this is a point upon which unequivocal proof is still needed

The second fact is that the greater significance of rheumatism in childhood does not lie in the typical manifestations to which the name is given, and from which the child can be seen to be suffering, but in a single feature of these—i e , heart disease This, in any but its later stages, is not to be detected by the general public Yet, as is the case with all diseases of children, it is on parents as part of the public that we must rely for the making of the contact between patient and physician The peculiar situation, therefore, arises that the significance of the disease is in a region inaccessible to the observation of patient or mother, and without relation to the severity of the symptoms appreciable by either.

Thirdly, we have no certain knowledge of the actual cause and nature of the disease Two views are current By the early observers, rheumatism, or more strictly, those manifestations of it that had so far been identified, was looked upon as evidence of a particular constitution of the body. Somewhat later, a specific infection seemed the more probable explanation It is on this hypothesis, put forward and developed by F J Poynton and A Paine,[2] that nearly all modern conceptions have been based.

Infection or Diathesis?

To the practical aspect of the question the choice of hypothesis is crucial If it be granted that a given disease be the result, or the result mainly, of a specific micro-organism, then effective measures against the disease must wait upon the successful isolation of the organism, or the practical application of immunological processes yet to be discovered In the period before this has occurred the lines of work most likely to be fruitful will be those directed towards the modification of conditions within and around the child that favour infection with this organism If, on the other hand, the diathesis theory be assumed, other lines of approach to the problem come into view In the disease under review during the past two years certain evidence has been adduced to suggest the value once more of considering the constitutional or diathesis[3] hypothesis According to this view, the outbreak of the disease would depend rather upon constitutional modifications of the bodily habit than an " infection " with a specific organism

The importance of this point cannot be exaggerated If the constitutional view be conceded, the emphasis of study, and ultimately of treatment, is thereby shifted The dependence of treatment upon identification of the organism becomes greatly diminished, and the inquiry shifts to points concerning the endocrine and biochemical make-up of the individual For the designing of work either with regard to the study of the disease or to the devising of means for its control, the choice of hypothesis is of fundamental importance.

Bearing on the Study of the Disease.

Hitherto, all inquiry into the nature of the disease has been conducted by separate investigations specifically designed and carried out alongside of the ordinary clinical work That is to say, while nearly all workers in this field have been keenly interested in the problems of the disease, and have contributed much of great value to our knowledge of its clinical course and manifestations, when a specific aspect has come to be investigated, a separate effort has been needed to examine and report on the material available Two examples of this kind have recently been provided by the reports of the B M A and M R C Committees Just so long as the infective theory of the disease exclusively dominates our conception of it this system is inevitable Bacteriological and statistical work have no bearing upon the treatment of the individual patient at the time concerned until their goal has been reached

If, however, the alternative hypothesis be taken for examination, a different type of attack is possible. Here the nature of the disease is conceived as within the constitution of the patient himself, as has been brought out recently by Hurst[4] According to this view, the whole individual is the subject of inquiry and this inquiry can only be carried out by observation of the individual, whereas by an infection theory the subject of inquiry has to be isolated from material supplied by the patient It is therefore necessary, if this hypothesis be held, to devise methods of study which shall concern themselves with the life-history of the patient, his biochemical and endocrine processes, his response to specific rheumatic infections, and to circumstances of his daily life Considered from this point of view, no attempt has yet been made to carry out exhaustive research, although, as will be seen later, some tentative beginnings are already in being The obstacle to all work of this kind is the nature of the contact at present existing between child and physician It has been abundantly proved that acute rheumatism shows its main prevalence among children of the hospital classes. The contact of the profession with these children is through the work of the general practitioner and the hospital out-patient and in-patient departments. All these are heavily burdened with work, so that, on the one hand, it is only the child who is really ill—that is to say, who is suffering an exacerbation of his condition—who is brought for treatment. On the other hand, it is only possible by the undertaking of special and arduous work to correlate the records of these children. There is, therefore, in the system at present in force no facility for the continuous study of children from the constitutional point of view, and if this is to be undertaken some other machinery must be devised.

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[1] Annual Report of the London County Council for 1925, vol iii , Public Health Pub

[2] Researches in Rheumatism, London, 1913

[3] Llewellyn J Llewellyn Proc Roy Soc , Med Jan 1926, p 1

[4] Brit Med. Jour , May 7th, 1927

Bearing on Prevention and Control

It is in a sense true in this, as in all diseases, that the problem of prevention and control is dependent upon the discovery of the cause or causes of the disease. But it is perhaps worth remembering, in the face of the difficulty of the problem, that the elimination of a disease can be achieved without an exact knowledge of its causation, as in the case of leprosy and typhus in Europe, and that the discovery of the Klebs-Loffler bacillus has not been followed by the disappearance of diphtheria.

In rheumatism it is clear that there are two aspects to the problem, each of which requires separate consideration. The one, that to which attention is increasingly being directed is the care of the heart of the already rheumatic child. The other is the attempt to control the incidence of the disease itself, and to achieve means for the prevention of its appearance in children who can be expected to become rheumatic. These problems, though intimately related, and common in origin, need to be kept very carefully distinct. All chances of success depend upon their separate consideration, and it is the failure to do so that determines the ineffectiveness of so many of the proposals at present current.

It is obvious that any scheme, either for the care of children already rheumatic, or for the study of the disease, must be based upon a definite hypothesis of the nature of the disease. Up to 1922, as has already been pointed out, work upon rheumatism has been conceived from the infective point of view and the results have been, on the whole, disappointing. In America a new step was taken with the formation of the Association for the Relief and Prevention of Heart Disease. This was intended primarily for adults, and embraced all forms of heart disease, but in 1915, W St Lawrence[5] adapted these methods to the study of the effect of rheumatism in childhood, and the first children's cardiac clinic was opened at St Luke's Hospital, New York. The aim of this clinic was the continuous treatment and observation, upon a classified system, of rheumatic children, with special reference to their heart condition.

In this country nothing of the kind was attempted until 1923. In this year, interested by St Lawrence's work, Prof Leonard Findlay and the present writer organised a clinic at the Royal Hospital for Sick Children, Glasgow, for the continuous supervision of rheumatic children attending that hospital.[6] As a result of this work certain facts became clear. It appeared that the manifestations of rheumatism in childhood, usually covered by such terms as the acute and convalescent stages, needed the addition of a third term for a complete description—that of the quiescent stage. Under this head is considered the period between attacks, when the disease smoulders, but is not apparent. Upon the conception of this quiescent stage the whole work of a supervisory clinic is based.

A New Basis of Classification

The second point of note arising out of the clinic is that of the importance of the basis of classification of these children. Hitherto, all classification of rheumatic children, whether explicit in records, or implicit in the mind of the observer has been based upon the *clinical form of the disease*—e g, rheumatic fever, chorea, tonsillitis. It has, however, been agreed that the significance of the disease does not lie here, but in its tendency to cardiac involvement. These terms, therefore, offer no help to the observer in his attempt to protect the future of the child. The use of them, moreover, necessitates a somewhat lengthy and detailed note on the cardiac condition being added to each case, and renders very difficult any survey of a number of cases.

For the working of this clinic the emphasis was shifted, and a classification was devised upon the basis of the children's cardiac history. Since the clinical findings by different observers in any given cardiac case are not always necessarily identical, an endeavour was made to arrange the classes so the discrepancies arising from this source should be reduced to a minimum. The classification finally adopted was as follows:—

Class P	Potential heart cases—that is, cases with definite rheumatic history who have never had cardiac involvement, and are now well
„ A	Cases with a history of definite rheumatism with cardiac involvement, which has now disappeared
„ B	*Cases with a definite rheumatic* history and present signs of cardiac involvement, but no symptoms referable to the heart
„ C	Children with a definite rheumatic history and present signs and symptoms of cardiac involvement, but no disability for ordinary life
„ *D 1*	Cases with a definite rheumatic history, present signs and symptoms of cardiac involvement, and definite disability for ordinary life
„ D 2	Cases without a rheumatic history, but showing signs of a cardiac lesion, and with some definite disability for ordinary life
Miscellaneous	Cardiac irregularities, effort syndrome and cutaneous eruptions supposed to be of rheumatic origin

From a practical point of view such a classification has the following advantages. When the original classification has been made, subsequent notes are reduced to a minimum. "Mild Class B," for instance, can describe all the essential points about a case. Whether this lesion is the result of an acute rheumatic fever, of growing pains, or of tonsillitis, though of interest, from the point of view of immediate treatment prognosis or recommendations to the mother, is of comparatively little significance. It also makes possible a rapid survey of a large number of cases without elaborate cross-indexing. By collection of those children whose classes have been changed during the year, immediate information is given regarding percentage improvement or deterioration in cardiac condition of the children. Further, any class of child can be quickly and easily isolated for reference, examination, or experimental therapeutics.

It will be noted that this classification embraces only children already the subject of a *definite* rheumatic condition. This was deliberate, because the original clinic was devised to study the possibilities of prevention and control of heart disease in children who were already rheumatic. In other words, to keep Class P children from moving into any other class, and to move as many of those in the other categories as possible to Class A.

An Attack Upon the Rheumatic Constitution

Another fact stands out clearly as the result of the work of this clinic—viz, that while work of this kind is very useful and effective *within its own limits*, if an attempt is to be made to achieve the *prevention* of rheumatism, a still earlier attack must be made upon the disease. But since all signs of rheumatism in children, other than those of acute rheumatic fever, chorea, and tonsillitis are ill-defined and susceptible of varying interpretation, the formation of a clinic upon this basis will involve the assumption of the existence of a rheumatic constitution. That is to say, children of rheumatic stock and those children who are subject to all forms of vague and indefinite rheumatism will also need to be included Not only must the basis of the clinic be thus widened, but the treatment of these children must follow different lines, and be directed as much towards raising the child's general resistance, as to combating his definitely rheumatic tendencies

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[5] Hospital Service Series, May, 1920, pp 151–181

[6] Brit Med Jour, 1926, i, 817 and 820

These are as yet hypothetical conceptions and need wide testing before their acceptance One attempt to do so is already in existence in the form of a "children's cardiac clinic" at the St Marylebone General Dispensary, which has been in operation since 1926 At this clinic children, whether definitely or possibly rheumatic, are received from the age of 2 years, and supervised until puberty, when they join one of the adult clinics of the dispensary The modifications introduced into the classification are as follows —

1 Class P. becomes subdivided into—

P 1	Children with history and complaints suggestive of rheumatism, no cardiac involvement, and *no* disability for ordinary life
P 2	Children with history and complaints suggestive of rheumatism, no cardiac involvement, and *some* disability for ordinary life
P 3	As in original classification

2 Class B becomes subdivided into—

B 1	*As in original classification*
B 2	Children with a history suggestive of rheumatism, present signs of cardiac involvement, but no symptoms referable to the heart

The standardisation of the classification with that already in use elsewhere allows both accurate comparison of results, and full development of preventive measures in either

Since the publication of the report of the Glasgow Clinic, the Science Committee of the British Medical Association have sat for a further consideration of the problem, and have issued a second report[7] on the Prevention and Control of Juvenile Rheumatic Infection In this communication the existence of the quiescent stage is accepted, and the principle of continuous medical supervision emphatically recommended The details of the one centre to which reference is made in the report are, however, so unsubstantial that it is impossible to discover upon what lines it is organised, what class of child is accepted, and how classified, and upon what lines the suggestions of treatment are made. The actual proposals of the report also suffer from the same vagueness; and this is unfortunate, because in the medical supervision of rheumatic children we have not only a method of treatment but also an instrument which can be used both for the examination of the effects of treatment and to the study of the disease itself At present treatment of the disease and inquiry into its nature are far too apt to be kept in watertight compartments What is needed is a method by which the natural history of the disease, the factors influencing or retarding its development, the effect of attempts to modify the constitutional habit, can be provided in a large number of cases in such a form as to be readily and easily manipulated and studied It should be possible to achieve this and simultaneously to provide abundant material for ætiological and therapeutic research

It is clear that work of this kind opens new avenues for correlated research, while it demands some modification in our attitude to systems for control of disease Such methods, by providing material for investigation upon any desired lines, and by demonstrating the life-history of the disease, will exactly fill the obvious gap in our present system. It is true that there may be difficulties in associating these principles with the work of a voluntary hospital, but they are, I am confident, not insuperable On the other hand, by work of this kind a weapon can be forged for the study of the constitutional hypothesis of rheumatism, which, it is contended, is the next and most hopeful step to be taken towards an understanding of the disease

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[7] Brit Med Jour, April 16th, 1927

SENESCENCE AND SENILITY.*

BY LEONARD WILLIAMS, M D Glasg,

PHYSICIAN TO THE LEGAL AND GENERAL ASSURANCE SOCIETY

[Dr Leonard Williams commenced by acknowledging the wit and wisdom of previous contributors to the subject, and pleading that as senescence "like love is a story which never grows old, something may be gained if every now and again an effort be made to reconsider it in the light of modern fashions in medical thought" Pointing out that the circulatory system contains the physiological secrets of nature, he deprecated the preponderant rôle assigned by clinicians to the corpuscles, and urged due appreciation of the functions of the plasma as essential to the understanding of physiological and clinical phenomena, more especially where neurological problems are concerned "The impetus of our start in life," he said, "the momentum which is to keep us in being are derived from the liquor sanguinis which we inherit from our forebears", and the interesting question in reference to the subject of the discourse was what ingredients in the plasma determine long life to some, and to others premature death, because the momentum is at an end He continued —]

THE POTENCY OF THE PLASMA

The mere enumeration of the ingredients of the plasma suffices to impress us with its capacity for variation, and causes us to wonder that in any given individual its composition should remain as uniform and constant as, judging by the consistency of character and conformation, it certainly does The primary pattern, the broad lines of its composition, are evidently determined at birth They are profoundly altered at puberty, it is true, and as the years roll on, the detail becomes modified; by study and suffering, refined, by selfishness and materialism, brutalised, but the general make-up, both physical and mental is retained with surprising uniformity to the very end

This potent fluid we know to contain first and foremost foodstuffs, among which we must include vitamins These are for the nourishment of the tissues, to repair waste, to supply fuel, to liberate energy We also know that before the foodstuffs, as originally ingested, can reach the blood stream, they are warmed, churned, and liquefied; and then, for the most part, they are subjected to a complicated chemical process in the liver Some of them, nevertheless, escape the cleansing fires of this formidable viscus, and succeed in gaining direct access to the blood through the thoracic duct I shall return to this matter later, but I may be allowed to pause here, to emphasise the obvious, by pointing out that if these simple facts of elementary physiology were simply faced and squarely acted upon, there would be far less premature senescence in the world than there is now If the pristine adolescent purity of the plasma were preserved throughout the adult period, both senescence and senility would be indefinitely postponed The impurities which creep into the liquor sanguinis, and guide us gradually to our destruction, are derived from the material which we ingest If all of it could be passed through the hepatic furnace, matters might be better than they are It is the backstair of the thoracic duct which causes most of the trouble In this connexion, let us not forget the fact of which Sir Humphry Rolleston[1] recently reminded us—namely, that Carrel, Chamby, and Grandcourt have conclusively shown "that with frequent washings to remove waste products, tissue-cells can be cultivated indefinitely for years in vitro, and have an unlimited capacity for multiplication" But must we blind ourselves to the fact that "it's the washings as does it"?

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* Being the Cavendish Lecture (abridged) delivered before the West London Medico Chirurgical Society on May 27th

[1] Concerning Old Age, Trans Roy Institut, May 13th, 1927

But the plasma does not restrict its recruiting activities to the gastro-intestinal tract; it lays other systems under contribution. The most important of these is the endocrine system. I need not insist upon the importance of the subtle essences of the glands which compose this system. The fact that they are poured straight into the circulating fluid without the intervention of a duct, of itself suggests their transcendence, as though Nature, in her thrift, dared not risk the loss or waste or change of one drop of so subtle and precious an elixir. We have only to recall what the absence of the thyroid tribute spells in cretinism and myxœdema, what the suprarenal, in Addison's disease, the meaning of the absent gonad at puberty, and of the lazy pituitary in adolescence, to realise the profound influence which these glandular subsidies to the plasma exercise over the maintenance and efficiency of the individual, for at any given moment a man may be said to be the resultant of his hormones. Of the ferments, catalysts and antibodies which are obviously contained in the liquor sanguinis we know next to nothing. But we know them to be there, not only adding to the complexity of the fluid, but enhancing and reinforcing its preservative and protective value to the economy.

[The lecturer then proceeded to point out that the functions of the plasma, though primarily donative, are more emphatically and essentially depurative, so that if a man persistently presented his plasma with unsuitable material, the extra energy that would be called for would lead to earlier exhaustion of the whole machine, the hostile material finding its way into the liquor sanguinis by means of the thoracic duct. Much of the premature senescence thus induced the lecturer attributed to gluttony and cookery, a pusillanimous acceptance of things as they are having been engendered. He continued :—]

COOKERY AS PRACTISED

In saying this, I must not be understood to condemn cookery as such, but merely the crude and cursory cookery of the day. Cookery is an art, which, properly practised, as an art, by artists, materially adds to the æsthetic enjoyment of the few good things of life, but, as usually practised in this country, cookery is merely a bad habit. Performed as it is, automatically and perfunctorily, it makes nourishment nasty and unappetising, and, by depriving food of vitamins and other subtleties, and in other ways, renders it foreign to our digestive juices. Cookery, as at present practised, is nothing but a species of more than usually stupid snobbery. Like the grand piano which, while suitable in the palace, becomes a piece of fantastic foolery in the cottage, cookery is too often merely penury masquerading as magnificence. Most sensible people would rather drink water than bad wine, but, judging by the common custom, the same people would rather eat badly-cooked food than eat uncooked salads, dairy produce, and those kindly fruits of the earth for which they vociferously thank the Lord on Sunday, and relegate to an emasculating stewing-pan on Monday. And this senseless habit not only imposes upon us, and upon our children, a series of dire deficiency diseases, of which ugliness is one, but it also confers on us most of the microbic maladies which decimate us. Our food is subjected to boiling, baking, braising, stewing, grilling, and other firing processes, and is thus made into a culture-medium for microbes. It is manipulated by the chapped and septic hands of a frowsy and uneducated frump—for the most part fat—to whom we are foolish enough to entrust the work proper to a skilful artist. And we tamely eat the resulting concoction in the pious belief that it keeps up our strength, and are surprised that our jaded liquor sanguinis insists upon deteriorating. *Homo sapiens* may be wise and watchful in some matters and clever and cunning in others, in the matter of his food, he is nothing more than an ignorant and obstinate simpleton.

An impure plasmic environment, serious as it must be in the case of all the cells in the body, will disturb the various systems in the order of their complexity or nobility of organisation; the nervous system first, then the glandular, and so on through the muscles downward to simple connective tissue. For the earliest signs of degeneration, then, we must interrogate the nervous system, more especially that part of it which is concerned with control and intellectuality. These are typically the first to show signs of decay, the flower goes before the leaf, the leaf before the twig, but that is not invariably the case. In one disease, at any rate, Parkinson's disease, which may be described as the personification of old age—" where palsy shakes a few sad last grey hairs "—the various systems seem to be smitten almost equally and simultaneously. I have said that premature senescence renders us tamely submissive to evils as we encounter them. Man is by nature a hunter and a fighter, and when he ceases to be so, he has already begun to degenerate. When youth loses its fire, maturity its illusions, and middle age its ambitions, it is surely a sign that the brain cells are being bathed by a liquor sanguinis which is already bereft of its pristine vigour, and the earlier in life the backsliding occurs, the more certainly does it point to an active intoxication of the plasma, to a filling up of the cup with cumulative culture bouillons. The genus homo inherits from his simian ancestors a certain playful devilry of spirit, indicated in youth by a sense of boisterous humour. When that gives place to a square-toed pomposity of attitude, as who should say of all things, " we are not amused," then it means that the plasma has been deprived of its erstwhile purity and the descent has begun. That every time of life has its appropriate attributes I am willing enough to admit. The airs and graces of youth sit badly enough on the aged. Tully said of Hortensius, " He remained the same, but the same no longer became him." This particular affectation is less prevalent among men than it is among women, but it is ugly in either sex because it is essentially forced and unnatural. It is not the external gestures of youth that the senescent should seek to retain, but the spirit of adventure and the chase, and these can be displayed in the mental arena no less than in the muscular. Smug-faced satisfaction is the one great and unforgivable sin.

THE VIRTUES OF FASTING.

[The lecturer then urged that to maintain the sovereignty of restraint and moderation over insidious and insistent invitations to indulgence demanded watchfulness and determination. In brief, this meant a certain measure of fasting, and he used the word advisedly, indicating that fasting and starving are not synonymous, for when a man fasts he lives on his redundant reserves. He continued :—]

It is a strange and saddening reflection upon our therapeutic methods that our attitude towards the *vis medicatrix naturæ* should be so shamefaced and stealthy. We recognise in our heart of hearts that all our healing is due to the wizardry of its working, and yet we treat it as though it were an unqualified assistant, open association with whom would surely get us into trouble with the General Medical Council. We muddle it with mixtures, and vex it with vaccines, we slice it with scalpels and fix it with forceps, but we are seldom firm enough to give it a free hand. And it is more especially in the matter of feeding that the free hand is withheld. At a time when the energies of the whole economy are bent upon restoring the equipoise by attacking a microbe, neutralising a toxin, or righting a metabolic wrong, it is forced to turn aside in order to deal with uninvited and unwelcome foreign guests which, in the form of beef-tea and other so-called nutritious, but in reality excrementitious, concoctions, are poured into a stomach which is screaming aloud for repose. In such circumstances the only food which even spare people require is there, in *their tissues*. Moreover it is there, in a physiologically assimilable form, prepared in Nature's kitchen and stored in her larder for use in such a crisis as we are considering. But, instead of allowing the economy to utilise this partly digested food which is willing and waiting. we compel the wasteful expenditure of precious energy by constraining the victim to undertake the onerous and laborious task of digesting and assimilating alien and unwanted material In comparison with the ordinary British invalid, the forcibly-fed Strasbourg goose is an ascetic

If this aspect of the matter is explained to them there is as a rule. very little difficulty in inducing people to face the ordeal of fasting . more especially in chronic metabolic diseases. in which the patient though never very ill. is never quite well and is properly impatient of his impaired capacities The only trouble arises from the fact that so many people especially women, are deeply imbued with the epic and esoteric element in all illness. We. of the profession. are charged to do something , preferably something mysterious or heroic An operation, an X ray examination. a cystoscopy, a sigmoidoscopy—certainly · but a policy of ' wait and see " what Nature can do for herself without the meddlesome hand of man—never

And yet fasting is the simplest and safest of all remedial measures It is Nature s way. During the first few days when the expectant stomach, accustomed to stimulation is made to suffer the sorrows of deferred hope. it may be difficult to discern any blue in the sky. Nevertheless, by arousing the fighting instinct latent in most people. even the gloom of these few days may be lightened by the sure prospect of ultimate victory ; and with these days behind him the patient is impelled to wonder why he ever eats anything

ARTIFICIAL REJUVENATION

[Referring to the popularity as a topic of tea-table conversation of procedures for artificial rejuvenation, Dr. Williams gave it as his opinion that Voronoff s reasoning was sound, adding that he himself had seen excellent results from grafting operations He would however like to add :—]

In my judgment the Voronoff operation does not prolong life but it does prolong efficiency for the duration of life. It contributes nothing to longevity but a great deal to the prevention of morbid senility It possesses the inestimable merit of enabling a man to make his exit by crisis instead of by lysis My point, however. is that the operation ought never to be necessary. Under the present dietetic dispensation there will always be hundreds of people whom it will benefit enormously ; but if such people had only paid a due respect to the purity of their liquor sanguinis, the necessity for grafting would never have arisen The best measure of rejuvenation is a thoroughly depurated blood-supply and the best means for securing that is to practise moderation punctuated by fasting. It is better to find salvation in a dietetically sober and righteous life than to seek to conjure back competence by a cutting operation. Nor must it be supposed that the discipline of fasting as a measure of preservation is an idle fancy altogether lacking in scientific sanction. In a recent lecture Sir Humphry Rolleston [2] says —

> ' It is interesting to recall that in the humble planarian flat-worms the life cycle may be dramatically changed · by starvation they not only become smaller but their structure becomes simpler By alternate starving and feeding these flat-worms have been kept stationary while others passed through nineteen generations thus showing that the duration of existence of cells is not so much a matter of time as of the work or metabolic changes that go on inside them '

And yet though by laborious days, occasional fasts and grafts. and otherwise we may succeed in preserving our plasma in a state of cleanliness thus preventing precocious decadence the ugly fact remains that sooner or later. in one form or another, senility awaits us all For. although by wisdom the plasma may escape pollution, it cannot in the nature of things avoid eventual dilution And we all desire that the stage of dodderance may be short Though we are taught to pray to be delivered from sudden death in the case of those we love—a selfish prayer—each one is entitled to hope for a sudden termination in his own case The stage of the slippered pantaloon has no attraction for any of us Rather do we envy the fate of Oliver Wendell Holmes's one-horse shay which went for a hundred years and a day. and then disappeared into nothingness :—

> " All at once and nothing first
> Just as bubbles do when they burst "

That is a natural and even laudable ambition. but it were unreasonable to expect escape from some evidences of gradual decline This is a matter which would seem to depend very largely upon the endocrines

[The lecturer then alluded to the natural sequence in which living dissolution occurs saying that the higher centres as a rule mercifully succeed in maintaining their dominance till the end He quoted Bacon and Swift as caustically critical of the defects of old age, and closed by presenting another side of the picture in these words —]

There are certain qualities of head and heart derived from the manifold experiences of service, sacrifice, and suffering. inevitable in a long life. which are peculiar to the unpolluted plasma of natural senility, and these qualities at their best. are of immense advantage to those families and communities which are wise enough to profit by them. Among such qualities are judgment insight. tolerance. and equanimity These are natural to the stage of healthy old age, and it is these which we must seek to cultivate when the signals warn us that we are nearing the place ; when we become coldly conscious of the glimmer of twilight ' When lengthening shadows on the lawn. give notice to the startled grass that darkness is about to pass '

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[2] Trans Roy Institute

Clinical and Laboratory Notes.

A CASE OF

HYPERTROPHIC OSTEO-ARTHRITIS OF THE CERVICAL SPINE

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AND
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ASSISTANT SURGEON TO THE INFIRMARY

FOR several reasons we consider the following case of sufficient interest and importance to be worth record

A. B , a young man aged 21, was sent to the out-patients' department Aberdeen Royal Infirmary, in October, 1926 He complained of weakness and uselessness of the right hand

History —About five years ago he noticed that the right hand was weaker more clumsy in action and more easily tired than the left Two years ago he noted that the right hand was smaller than the left. At no time was there pain or discomfort in the hand apart from a tendency to become easily tired

General Condition and Previous History —He is big. strong and active, a warehouseman and has never been away from work on account of illness. He had measles at the age of 5, complicated by suppurative otitis media. This ear condition became chronic and persists. Apart from a fall when 12 years old there is no history of trauma. This fall apparently did not cause any disablement.

Condition on Examination —All joints of the upper extremities moved fully and freely There was definite weakness and wasting of the muscles of the right arm as follows · the intrinsics of the hand and the flexors and extensors of the wrist and fingers The muscles of the right upper arm were, perhaps, a little smaller and weaker than those of the left side, but there was no definite wasting We thought this little difference of the upper arm muscles due to disuse or rather to the fact that the left arm was used a great deal more than the affected arm. There was no incoördination and no tremors of either upper extremity. Sensation was defective for wool and pin-prick along the ulnar border of the right forearm. Neck movements were slightly restricted in all directions, especially flexion to the right. On the right side of the neck there was noticeable a protuberance just above the middle third of the clavicle. This protuberance felt hard and bony. Trunk movements were full and free. Sensation over the trunk was perfectly normal for wool, pin-prick, and thermal stimuli. The abdominal and cremasteric reflexes were present and equal on the two sides. In the lower extremities movements, power, coördination, and sensation were normal. The knee-jerks were too brisk, and there was a tendency to a brief clonus on the right side. The plantar reflexes were definitely flexor in type.

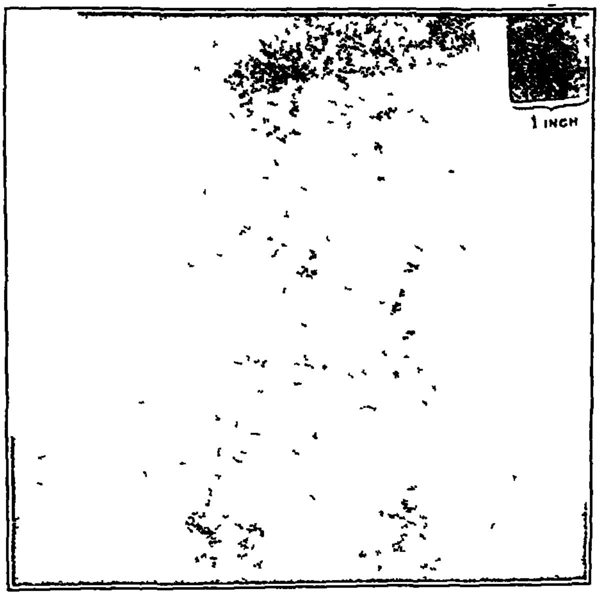
There was no sphincter trouble. No evidence of cervical sympathetic dysfunction was present. There were no Heberden's nodes. Syphilis may be excluded, the W.R. being negative. There was no evidence of genito-urinary infection. We considered the symptoms due to pressure on the lower roots of the brachial plexus of the right side.

Radiograms show a massive enlargement of the lower cervical spine. On the anteroposterior view (Fig. 1) there are two lateral curves, the upper concave to the right, the lower concave to the left. The lateral view (Fig. 2) shows an increased forward bending about the middle of the cervical spine. The intervertebral discs have apparently disappeared in places. The bodies, laminæ, and spinous processes of the lower cervical vertebræ exhibit a marked increase in density with apparent narrowing of the intervertebral foramina. Those in the lower part of the cervical spine cannot be made out. Radiograms of dorsal and lumbar spines show no osteo-arthritis.

Discussion

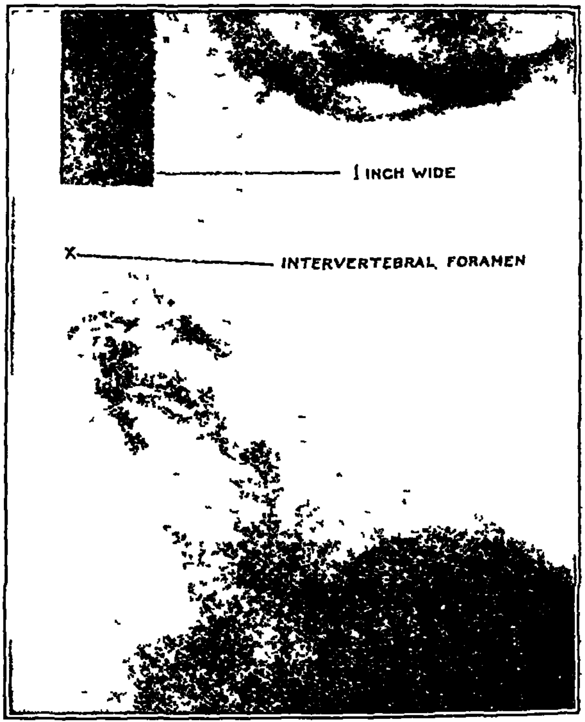
This is presumably a case of hypertrophic osteo-arthritis of the cervical spine. The condition is not common. Elliott[1] was unable to find in the literature any specific reference to it. Our case would appear to support his view that the lower cervical region is especially susceptible to this disease. We do not wish to enter here into a discussion of the ætiological factors, but would note the presence of a focus of chronic suppuration—namely, otitis media. We would suggest that the tendency to select the lower cervical spine is not unconnected with the joint mechanisms of this part, for here we find a flexible segment connected to a relatively rigid portion.[2] This would appear to be a likely site for the occurrence of special stresses and strains and therefore likely to determine the site of the osteo-arthritis. The case differs from those cited by Elliott in that pain is not and never has been present. It also shows, as far as radiograms are concerned, a greater hypertrophy of the affected spine.

FIG. 1



Anteroposterior view of cervical region

FIG. 2



Lateral view of cervical region

A FURTHER NOTE ON THE WATER-SOLUBLE OVARIAN HORMONE.

BY F. DICKENS, M.A., PH.D.,

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AND

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(From the Biochemical Department, Middlesex Hospital.)

AFTER reading the paper by E. Laqueur, P. C. Hart, and S. E. de Jongh in THE LANCET of May 28th we feel that some further remarks are necessary in order to clear up certain points raised by these authors. In the first place we should like to draw attention to the fact that our paper was intended merely as a note upon a method evolved by ourselves for obtaining the hormone in a water-soluble form.

Whilst we were familiar with the published work on the subject, including that of Prof. Laqueur and his collaborators, it was clearly impossible to enter into a detailed historical review. Since, however, we are taken to task for not referring to a paper in the Proceedings of the Royal Academy of Sciences,[1] it will be as well to state that we were well acquainted with its contents, and had, in fact, repeated some of the methods given there. We can only repeat our statement, "in our hands, these methods have proved unsatisfactory." One of the difficulties encountered in this work was the great variety of methods given, with little or no indication as to which one the authors finally recommended The methods are almost entirely confined to preparations from liquor folliculi One method is described in which the proteins are precipitated with colloidal ferric hydroxide, but the authors state that this method is not satisfactory A second method consists of extracting liquor folliculi with chloroform Our difficulty arose in the separation of the emulsion formed, and we were unable to obtain any assistance in this direction from the published details The authors state :—

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[1] Elliott: Journal of Bone and Joint Surgery, January, 1926, vol. viii., No. 1.

[2] Treves and Keith: Surgical Applied Anatomy, 1918, p. 652.

[1] Laqueur, E., Hart, P. C., de Jongh, S. E., and Wijsenbeek, I. A.: Proc. Roy. Acad. Sci., Amsterdam, 1925, xxviii., No. 10.

> "We found it useful to prevent the forming of emulsions when shaking out with the volatile solvent, this may be done by completing the coagulation of the proteins by adding salt or acid, by centrifugalising, &c"

Again they state —

> "Besides chloroform we used carbon sulphide, carbon tetrachloride, benzene, petroleum-ether, tetralin, ligroin, ether, acetone, and ethyl acetate In principle all these yielded identical results, but our experiments are still too few in number Often the residue from the volatile solvent at first formed an emulsion with the water, in most cases, however, a simple filtration made the fluid clear, often the solution was water-clear from the first, and then its content of solids was minimal Probably this depends, besides on the nature of the solvent (which must dissolve menformon with as little water-soluble impurities as possible), on the freshness of the follicular liquid, and further on the completeness of the precipitation of the proteins, which then take the other colloidal constituents with them Finally the completeness with which the volatile solvent is removed plays a part, eventually also the temperature at which this has been done (We worked at atmospheric pressure, in vacuo, and in an air current at about 35°C)
>
> "All these factors, and many more are still to be investigated much more completely"

It can be seen that the authors do not intimate which of the alternatives is really the most successful, and it would appear that we were unfortunate in choosing one of their less successful recommendations

In their recent paper in THE LANCET Laqueur, Hart, and de Jongh give an account of the method which they now employ for the extraction of the hormone from placenta As yet we can make no comment upon this method since we have not had an opportunity of investigating it thoroughly We may mention, however, that it appears to differ considerably from any of those previously published by these authors

With regard to the physical and chemical properties of our extracts, we can only infer that the authors have mis-read our papers, since we have never suggested that our extracts consisted of the pure œstrus-producing hormone; indeed this is clearly not the case This is shown, for instance, by the fact that the further purification of the substance is a comparatively simple matter, and is at present being investigated by us Thus, with regard to the effect on blood pressure the Amsterdam workers state that " . whereas less pure preparations such as have been described in England by Dickens and Dodds towards the end of 1925, exert an appreciable lowering action upon blood pressure We think those authors are not quite justified in ascribing this to the hormone itself, it is more probably an effect of the impurities " In the paper referred to [2] this action was not, of course, attributed to the hormone at all, but was described as a property of the extract prepared by the modification of Herrmann and Fränkel's and Allen and Doisy's method, which we were then employing for preparation of an active substance from ovaries and placenta This is made quite clear in the paper in question, where we have throughout referred to the material as "the extract" and not as "the hormone" The water-soluble material prepared by the process which we recently described is without action on the blood pressure

The position with regard to this hormone is similar to that of insulin The earlier crude extracts caused a marked depressor effect, as was shown by Dudley in 1923 [3] Subsequent purification clearly showed that this depressor action was due to impurity, which, as a result of further investigation, could readily be removed

Similar considerations apply also to Laqueur, Hart, and de Jongh's criticisms of our observations on the chemical and physical properties of our recent extracts We recorded these since the extract was prepared by a new method and its properties were therefore considered of sufficient interest to report. The fact that our material, the purification of which we have reason to believe we will be able to continue much further, contains sulphur and gives certain qualitative reactions, is, of course, no indication that the pure hormone itself is responsible for these properties There is nothing in our paper which could justify such an assumption It is clear however, that our material resembles the final products of Laqueur and his co-workers in that neither is soluble in ether or acetone, and both are soluble in water. This would tend to confirm the view recently put forward by us that our 1925 fatty material, like that of Herrmann and Fränkel and Allen and Doisy, probably consisted of the water-soluble substance retained in solution in fat-solvents by the presence of large quantities of inactive fatty substance.

We have other evidence confirming the ease of adsorption of the active principle Thus, after prolonged hydrolysis of the water-soluble product with dilute acid and subsequent neutralisation, although the solution retained a considerable portion of its activity the addition of picric acid solution did not cause the formation of a precipitate of picrate Thus the method of preparation which we have adopted probably involves the adsorption of the active principle on to the precipitate of protein picrate formed on adding picric acid to the acid digest

We are extending our observations in this direction and these will form the subject of another communication

AN ATYPICAL CASE OF CONGENITAL JAUNDICE WITH HEPATIC CIRRHOSIS

BY R L MACKAY, *M C.*, B SC, M D GLASG.

THE comparative infrequency of fatal jaundice in the early days of life and the fact that a post-mortem examination was performed, justify description of the following case.

Clinical History—On August 22nd, 1924, I was called to see a baby then 11 days old. The mother complained that during the previous seven days the child had become increasingly yellow At birth it had had a normally coloured skin and weighed 8 lb For five days it was breast-fed, but about the fifth day the midwife in attendance noticed a suggestion of jaundice and to arrest this ordered the substitution of a proprietary food for the breast-feeding There had been practically no vomiting till the ninth day, when it was given castor oil

On the eleventh day, when I first saw the child it was weakly and wasting, had widespread jaundice of the skin, lips, and sclerotics, and yawned frequently The facial lines or furrows were very prominent, giving an "old man" appearance Temperature, pulse, and respiration were normal. The umbilicus was not quite healed but was free from any sign of inflammation and there was no rash around the anus or on the buttocks The fæces were yellow-green in colour and slightly curdled, but no mucus was present No abdominal tenderness was detected, but the liver was much enlarged and easily palpable The spleen was not palpable There had been no vomiting in the previous 24 hours Calomel gr ¼ was given

The condition then developed as follows · Twelfth day: Constipated Hyd *c* cret given Sod cit added to feeds. Thirteenth day · Child appeared better Jaundice less deep No yawning No marks on buttocks Breast-feeding resumed Sixteenth day Jaundice still marked Took parents' blood for Wassermann *reaction* Both proved negative Twentieth day. Slight *papular* eruption appeared on buttocks, not much different from the common maculo-popular napkin rash No snuffles, no *coughing, no* vomiting. jaundice slightly less marked Child still on breast, but not gaining ground Twenty-fifth day A small spot of fresh blood observed in the stool No vomiting, no colic, no diarrhœa No rash now on buttocks Twenty-sixth day Slight vomiting of fresh blood occurred In the evening this recurred, and then became frequent, until the child died about 4 A M on the twenty-seventh day, bleeding from nose, mouth, and anus Though a request had been made several times for it, no sample of urine could be obtained

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[2] Dickens, F, Dodds, E C, and Wright, S Biochem Jour, 1925 xix 853

[3] Dudley, H W Ibid, 1923, xvii 376

Family History —The mother, aged 41, had always been healthy and robust She had a sallow complexion There was no history of jaundice in any of her relatives and no personal venereal history Her Wassermann reaction was negative The record of her pregnancies is as follows (1) Male, alive and well, aged 11 years Sallow colour, Has a slightly dilated heart, a mitral murmur, and occasional albuminuria (2) Male, miscarried at 6½ months (3) Male died aged 10 days, from jaundice (4) Female, died, aged 1½ years, from pneumonia (5) Female, died aged 2¼ years, from whooping-cough and convulsions (6) Female, died from jaundice, aged 3 weeks Premature at 8 months (7) Female, died from jaundice, aged 4 weeks (the present case) (8) Male, born March, 1926 A perfectly healthy child

The father has a sallow complexion, as have also his brothers and sisters None appear to have had jaundice No venereal history obtained Wassermann reaction negative Teetotal Recent erysipelas

Post-mortem Examination —The parents would only permit a short examination of the abdominal cavity This was carried out about ten hours after death by Dr W M Brown and myself The following points were noted —Mouth full of froth and blood Stomach contained large clots of blood, source not ascertainable, mucous membrane bile-stained, no pyloric stenosis Small intestine walls hæmorrhagic, lumen full of blood Large intestine no marked changes in walls, blood in lumen, a few recent adhesions around colon. Anus blood exuding from it, skin normal Peritoneal cavity no free fluid Liver much enlarged and firm in consistence, deeply bile-stained, surface smooth Gall-bladder normal in size, containing a little viscid muco-bile, cystic bile-duct patent. Common bile-duct a small soft mass, size of a pea, covered with mucus but of a consistence firm enough to block the duct was found in the lumen, it was easily broken up by the fingers It was difficult to pass a probe through the duct to the duodenum Spleen normal in size and appearance Umbilicus and vein no sepsis present.

Histological Examination —I am indebted to Dr John S Young, of the Department of Pathology, Glasgow University, for the following report on the sections —Liver advanced generalised pericellular cirrhosis, liver cells much destroyed, bile-ducts *dilated and full* of bile, but the lumen everywhere intact, no spirochætes present Spleen shows nothing abnormal, no spirochætes present (Levaditi's method) Kidneys a slight increase in interstitial tissue Common bile-duct lumen patent and normal, no inflammatory changes in wall

Diagnosis

The clinical course of this case made exact diagnosis difficult during life, and the post-mortem findings, distinctive as they are, tend to increase that difficulty Jaundice occurring in infancy and childhood may be considered as likely to be one of the following varieties —

(1) *Simple icterus neonatorum* is definitely eliminated by the long duration, the enlarged liver, the hepatic cirrhosis, the hæmorrhages, familial history, and fatal ending

(2) *Infective jaundice* (Winckel's and Buhl's varieties) The absence of any signs of sepsis, of umbilical hæmorrhages or of pyrexia, hæmaturia, splenic enlargement, cyanosis, or of a prevailing epidemic, appear to be strong evidence against this variety while the advanced nature of the cirrhosis make it probable that this had begun during intra-uterine life

(3) *Acute catarrhal jaundice* affects older children, is rarely fatal, is unaccompanied by widespread hepatic cirrhosis, and by such marked constitutional disturbance as was found in the case under consideration

(4) Jaundice due to *biliary concretions or calculi* does occur and is of marked degree It may be present at birth or shortly afterwards The small mass found post mortem in the common bile-duct was so soft and moist, and so easily squeezed flat and broken up between the fingers, that it seemed of recent formation—possibly a few hours or a day or two before death—and could not, therefore, be considered as the initial cause of the hepatitis Further, above the mass there was no dilatation of the common bile-duct, and the gall-bladder itself contained very little bile

(5) The apparent familial tendency to jaundice might at first favour a diagnosis of *familial acholuric jaundice* The intensity of the jaundice, its rapid course and fatal ending, the small and cirrhotic liver, appear to eliminate this variety Unfortunately, the fragility of the red blood corpuscles was not determined

(6) *Infantile biliary cirrhosis* occurs chiefly in India, is familial, generally begins about the seventh or eighth month of life, and is accompanied by hepatic cirrhosis of an intra and inter lobular type The onset of the disease by the fourth day, its rapid development and ending, the small spleen and generalised pericellular cirrhosis, and the rarity *of its occurrence in this country do not favour this* as a diagnosis

(7) *Acute yellow atrophy* has been recorded as a possible cause of jaundice in the new-born, but there is little in the present case to suggest it

(8) Congenital obliteration or *stenosis of the bile ducts* is a rare anomaly It may be familial, and give rise to portal and biliary cirrhosis with a cholangitis affecting the small and large ducts and the gall-bladder There is fibrous thickening of the bile-ducts The lumen may be recognisable microscopically, but no epithelial cells are present There is an enlarged cirrhotic liver and a large spleen The case here considered bears a reasonably close *resemblance to this condition* The early, progressive, severe jaundice, the absence of pyrexia, the emaciation and hæmorrhages, and the enlarged cirrhotic liver might seem to settle the diagnosis A careful examination of the bile ducts, however, revealed no unusual narrowing or obliteration, the lumen, though small, being free from the liver to the duodenum, and the walls of the duct being normal on histological section Further, the first stool observed contained bile Thus, the anatomical condition necessary to establish this as a clinical diagnosis was found lacking on post-mortem examination The absence of a large spleen is incidentally an important factor against this as a diagnosis

(9) *Congenital syphilis* may appear a possible explanation *I have shown the liver sections to six independent* pathologists who have each pronounced the case on the histological evidence as being more or less characteristic of congenital syphilis The papular rash on the buttocks and the "old man" appearance might be possible factors in favour of this as a diagnosis Against congenital syphilis there is (1) the absence of spirochætes in the liver and spleen, (2) the small spleen, (3) the absence of "snuffles," (4) the negative parental Wassermann reactions, (5) the non-venereal parental history, (6) the absence of a history of miscarriages or still-births, and (7) the fact that a normal healthy child has since been born

Conclusion

It appears, therefore, that the evidence is so strong against each of the two most probable causes of death —namely, congenital syphilis or congenital obliteration or stenosis of the bile-ducts—that a definite diagnosis cannot be given It is suggested that no one of the nine conditions here briefly enumerated was alone operative or primarily responsible for death Further than that it is impossible to go with certainty It may be that the explanation is in the presence of some unknown toxin circulating in the blood of the mother during her pregnancy (or pregnancies) without apparent harm to her fully formed cells, and circulating in the fœtus, where it led to such a complete destruction of hepatic tissue that the condition virtually became incompatible with extra-uterine life For such a condition no postnatal treatment would be of any avail

References —Still, G F Common Disorders and Diseases of Childhood, 1920, p 305 Cautley, E Diseases of Infants and Children, 1910, p 363

The Debt on Westminster Hospital —During the present week an attempt is being made to clear off the debt of £17,000 The hospital, which was founded in 1719 with 12 beds, now has 230 beds, 100,000 out-patient attendances, and 17,000 casualties The week's series of events began with the festival dinner last Friday in the hall of the Inner Temple, presided over by the Lord Chancellor, the other guests including the Speaker of the House of Commons and the Master of the Rolls Since Monday last there have been daily health talks, the speakers for the week being Sir James Purves Stewart, Dr Adolphe Abrahams, Dr Donald Paterson, Mr Rock Carling, and Mr Arthur Evans On Monday there was a choral service at Westminster Abbey, with an address by the Dean, and on Tuesday Princess Arthur of Connaught opened a bazaar at the hospital On Derby Day there were collections at Victoria and Waterloo stations, and on Thursday a concert at the Central Hall The hospital has been open to the public on three afternoons when there were exhibitions of X ray and sunlight apparatus

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF EPIDEMIOLOGY AND STATE MEDICINE

A MEETING of this Section was held on May 27th, Dr S MONCKTON COPEMAN, the President, in the chair

Dr W. S C COPEMAN read a paper on the

PROPHYLAXIS OF MEASLES

He quoted statistics proving that the severity of measles had been grossly underrated in the past The death-rate in institutions of the Metropolitan Asylums Board in 1912 had been 20 3 per cent under 1 year and 18 8 per cent. between 1 and 2 years Methods of prophylaxis effective in other exanthemata were less efficient for measles on account of its long period of incubation and four days of often undiagnosed invasion with maximum infectivity. Epidemics of measles provoked less interest than epidemics of diphtheria, scarlet fever and small-pox, though they were often more fatal Present methods of prophylaxis were more or less traditional and were not rigorously carried out Wheaton and MacNalty recommended compulsory notification, early visitation of the home, and provision of adequate home nursing and medical care If some means of producing immunity in the susceptible could be added to these methods they would help to control the epidemics which occurred every few years

Serological Methods

After outlining the history of active immunisation against measles, Dr Copeman went on to describe the five ways in which the serum of convalescents, and to a lesser extent of adults who had had measles could be used In an emergency citrated whole blood could be substituted for serum

(1) *Seroprevention* —Serum could be injected into a healthy child or into an infected child during the first five days of incubation producing a passive immunity lasting about a month A larger quantity was required for the infected child than for the healthy. Unfiltered serum was more potent than filtered The recommended dosage varied, but 6–15 c cm. were the limits suggested for an adult during the early days of incubation The dose had to be increased in direct ratio to the time of exposure to the disease.

(2) *Seroattenuation* —The serum might be injected into contacts after the sixth day of incubation Measles would probably develop, but would be modified in its course, and active immunity would follow the attack This was the method of election The illness following had no catarrhal symptoms, Koplik s spots high temperature or complications

(3) Injection of serum at the beginning of the period of invasion would not affect the course of the disease but the rash around the site of the injection would be blanched (Phenomenon of Debre)

(4) *Serotherapy* —Injection of the serum after the disease had declared itself had no apparent action

(5) *Serovaccination* —Injection of serum into the unaffected subject followed by inoculation with the virus produced active immunity with less danger than a natural attack

The essential points in collection and preservation of serum were that the donor should be over 10 years of age. tested for syphilis malaria and tuberculosis and should have had an unmistakable and first attack of measles with uncomplicated convalescence and completed defervescence 500–600 c cm of blood might be taken from adults and the donor must be watched for several days afterwards lest he be in the incubation period of some blood-borne disease The blood should be taken between the sixth and ninth days after defervescence, this being the period when it was richest in antibodies, and it should coagulate at room temperature, the serum being decanted aseptically and tested for sterility To standardise potency it should be pooled with serum from at least two other subjects, and to ensure purity it should be kept in an ice-chest for four or five days before use In the cold it retained potency for several months. If doubt existed of its sterility it might be twice heated to 50° C at 24-hourly intervals or one drop of 5 per cent carbolic acid could be added for every 10 c cm R Degkwitz had produced serum from sheep but this apparently only had an inhibitory action on the symptoms and would not replace human serum Recently Ruth Tunnicliff and A L Hoyne had reported good results with goat serum using the green-producing organism Seroattenuation had the double merit of being applicable during an epidemic and yet of producing active immunity Most of the results spoke emphatically for the value of seroprevention in measles Debre and Joannon especially reported the eradication of two epidemics at their outset in a Medan infant asylum where the mortality in previous outbreaks had been 70 per cent

A Scheme for Combating Epidemics

Dr Copeman then outlined a scheme which he had elaborated from the work of many authorities for dealing with epidemics of measles Our present aim was he said to prevent every case and we were singularly unsuccessful It would moreover, be unwise to attempt to stamp out the disease unless adequate artificial immunisation were enjoined for if it returned to virgin soil the result would be a tragedy like that of the Faroe and Fiji islands We should aim instead at control It was during the fatal first three years that we should prevent measles, postponing it till over 5 when few healthy children die The population under 3 was 6 per cent only of the whole and the incidence of measles at this age, despite the heavy death-rate was only 12–15 per cent. of the whole To concentrate on this fraction would need no greater organisation than the present system. The scheme would require a skeleton corps of trained public health workers who could call upon a large body of less specifically trained but still useful workers from other departments in a short time. Secondly it would require a knowledge of where all children under 3 years were to be found Compulsory notification would be necessary The centre of every unit should be a serum-collecting station with a small laboratory and waiting-room attached for choice to some institution where measles cases were available The unit would generally be a large town and the M O H the central authority. Between epidemics the corps would collect a store of serum and educate parents about the danger of measles under 3 and the means of preventing it. The chief available channels for this propaganda were the press private practitioners lectures and posters in streets hospitals centres &c The staff should possess a card index containing particulars of all children under 3 in their area · duplicate copies of birth certificates sent to the M O.H would provide information of 90 per cent of the true number of births

Discussion

The PRESIDENT mentioned the recent work of N. S Ferry and L W Fisher who claimed to have isolated a diplococcus causing measles Until this should be confirmed our ignorance of the bacteriology of measles made us dependent on convalescent serum for immunological methods

SIR GEORGE BUCHANAN disagreed with Dr W S C. Copeman s statements about present attempts to prevent measles, and upheld the view that it was better to have measles and get it over This had been strikingly confirmed by the experience of unsalted peoples, such as Highland troops in the war and the natives of Fiji who contracted the disease in a very severe and fatal form It should be warded off until after the third year of life and then got over under as good conditions as possible Yet the children of better-off people did not die in large numbers even under three He thought the serological method suggested by Dr Copeman very interesting and would like to see it tried over here, but questioned whether the public would ever allow another child's serum to be injected From the practical aspect it would be better to work up the goat-serum method if that were possible

Dr A Montague described the 1875 and 1903 epidemics in Fiji Between these two dates measles had been entirely kept out by careful restrictions In 1903, when 3000 people died the officials realised that a grave mistake had been made and decided to allow measles to enter freely Since then there had been some slow smouldering epidemics, but the disease had had no practical importance Their policy for the future was to allow it to do its worst

Sir William Hamer agreed that the present system in this country was not that of preventing children from getting measles Since the M A B organisation had been enforced the death-rate from measles had gone down by half, and this was not accounted for by the falling birth-rate It would probably go down a great deal more if all cases of measles could really be removed to M A B hospitals in the early stages Infection meant real and lasting protection throughout life, and as it usually occurred before the children left the infant schools education was not interfered with This was a point to be borne in mind Would they be assured of this if dealt with by Dr. Copeman's method ?

Dr R A O'Brien spoke of the difficulty of getting a supply of serum, and mentioned a few cases in which it had been tried with apparent success—almost entirely in the families of medical men Tuberculosis was not a real danger, and malaria was not of much importance in this country, it was very rare to have spirochætes circulating in the blood except in cases of florid syphilis, but nevertheless the Wassermann test should be done on all donors It would be easy for a medical officer of health to get a tested stock and to inform practitioners in his district that it was there for trial Pooled adult serum would be worth trying in the absence of convalescents The only work of real promise that he had seen was that of Tunnicliff, but it had not yet been widely confirmed Her antitoxin was being tried, but contradictory reports were coming in, and it was very difficult in practice to get satisfactory results from such an investigation

Dr J. D Rolleston referred to the grave mishaps in connexion with toxin-antitoxin treatment, but said he knew of only three deaths with serum and one case of tuberculous infection of the wound He thought the difficulty of getting the serum had been insufficiently emphasised He had tried the Tunnicliff serum on 12 cases, but the results had not been conclusive, some patients escaped infection, some had mild and some abortive attacks, but these occurred in untreated cases Dr O'Brien's cases did not therefore mean much The Degkwitz serum had been a universal failure and caused severe serum disease without protecting from measles In his recent monograph Debré had described the production of active immunity by injection of very dilute solutions of virulent measles blood He did not think immunisation necessary on a large scale, it was not needed in better class families, and in his experience measles was almost always a mild disease when it broke out in hospital wards

Dr A. S. MacNalty spoke of the difficulty of getting donors, in the recent outbreak of poliomyelitis he had completely failed to obtain any donors for immunisation purposes Dr Copeman's scheme would have to be correlated with existing measures, particularly those for nursing and the prevention of complications In French experience measles had not been a mild disease in hospitals

Fleet-Surgeon W E Home referred to an investigation on the American Army in Texas in 1915, where measles had been regarded as a respiratory disease, with a rash as sequela, and treated by increasing ventilation and by airing the bedding and clothing Among 12,000 well-disciplined troops who obeyed orders the incidence-rate had been 30 per 1000, among two or three thousand notoriously slack troops the rate had been 130 per 1000 The significance of the respiratory part of the disease might explain why it was mild in hospitals

Dr M B Arnold wondered why it was that measles and whooping-cough had been omitted from the list of notifiable diseases when the Act was formulated It was interesting to see how the mortality of the diseases included in the list had decreased, compared with measles, influenza, and whooping-cough

Dr Graham Forbes hoped that Dr Copeman's inquiries would result in a clear lead for public health authorities School closure had not been the method of dealing with measles epidemics since 1902, when a careful inquiry had been conducted at Woolwich, and it had been found that the exclusion of unprotected children was a better method Two or three years ago a further scheme of cooperation between school nurses, teachers, attendance officers, and medical officers of health had been inaugurated, and this very complete system had borne fruit in a diminished mortality In the quinquennial period 1911–15 the mortality had been 9500, in the next five years 5800, and, in the years since 1922, 3800 This efficient organisation for controlling measles in schools would be available for use if sero-attenuation offered itself as a help to the present system

Dr A M Leathem described a small experiment with Degkwitz serum carried out by the Medical Research Council, but cut short on account of the alarm caused by reports of serum disease Further work was to be done on monkeys in the autumn

Dr Clark Trotter emphasised the importance of nursing and care He described the severe measles contracted by a Newfoundland regiment

Dr Stella Churchill said that during an epidemic in Bermondsey 16 children out of 40 died in the local infirmary, while those who were nursed at home did better. One way in which practitioners could help was by insisting on proper nursing in the home, parents would not keep children in bed for measles if left to themselves She thought there would be great difficulty in persuading the public to submit to any more inoculation methods

Dr T S McIntosh said that measles and whooping-cough were the two diseases in which there could be no question that artificial immunisation was a satisfactory thing It was questionable in other diseases which many people managed to escape altogether Seroattenuation produced a controlled natural immunity, which, there was good reason to believe, was better than an artificial immunity Better still was the immunity of a natural attack, and the best method was to let children get the disease and reduce the mortality As long as human serum was the only method immunisation would not be of much practical value He asked whether the immunity proposed by Dr Copeman was to be active or passive

Dr W S. C Copeman, in reply, said that active or passive immunity depended on many factors Sero-attenuation was the only practicable method in an epidemic, but it was also desirable because passive immunity lasted only a few weeks Weakly children could be made passively immune and take their chance of getting active immunity during the next epidemic He had no intention of supplanting present methods, all the organisation he proposed was working at Woolwich, which merely needed serum to complete his scheme The scheme was, of course, voluntary, and presumably parents would give their own blood to immunise their children If the mortality were halved by good nursing it would still be 10 per cent, and that was higher than the mortality from scarlet fever, for which there was an elaborate scheme in force He had not had difficulty in getting donors The Debré phenomenon provided a rough method of testing the value of sera

ROYAL SOCIETY OF MEDICINE. SECTION FOR THE STUDY OF DISEASE IN CHILDREN

A MEETING of this Section was held on May 27th, when Dr J D ROLLESTON gave a presidential address on the Section and Its Work from 1908 to 1926 The Society for the Study of Disease in Children, founded in 1900, was, he said, incorporated in 1908 in the Royal Society of Medicine, which then consisted of 13 sections At the present time the Section ranked sixth in the number of its members among the 24 sections of the Society During the war it had been forced to diminish its activities The number of meetings in the session was reduced from eight in 1913–14 to five in 1914–15 and four in 1915–16, no special discussions were held, the provincial meetings were suspended, and owing to the paper shortage the number of pages allotted to the sectional proceedings was considerably curtailed England however, appeared to be the only belligerent country in which pædiatric meetings were held regularly during the war.

The President then reviewed the work of the Section under the three headings of (placed in order of importance) special discussions, exhibition of cases and specimens, and short papers

The attention of British pædiatrists had, he said, first been called to the following conditions by their exhibition at the Section· renal infantilism, blue sclerotics and brittle bones, treatment of congenital syphilis by salvarsan, Calvé's pseudo-coxalgia, mitral dwarfism, lipodystrophia progressiva, Kohler's disease, œsophagectasis, and the "*pink disease*" He deplored the fact that so few pathological specimens had been shown at the ordinary meetings of the Section This had been particularly noticeable since the war.

In conclusion, the President suggested (1) that at least one meeting in each session should be devoted to a special subject illustrated by clinical cases, (2) that surgical members should be urged to exhibit more cases; (3) that the exhibition of cases or specimens and communication of short papers relating to acute infectious diseases should be encouraged, (4) that more pathological specimens should be brought before the Section

MEDICO-LEGAL SOCIETY

A MEETING of this Society was held on May 26th, Dr A. S WOODWARK, the President, in the chair Sir G. LENTHAL CHEATLE opened a discussion on some

Medico-legal Aspects of Fracture of Bone

There was a fallacious idea, he said, that bones did not attempt to unite until about the fourteenth day after the fracture, whereas, in fact, there was no interval between the injury and the attempt to heal In spite of great differences in longevity, the bones of all animals took about the same time to heal He went on to discuss the evidential value of X ray photographs In a certain dispute about the length of a fractured bone, two X ray photographs taken on different days were compared in court For a comparison of X ray photographs to be of any value, however, as far as measurement was concerned the light, the plate and the patient had all to be in precisely the same position When an operation had intervened between the two exposures it was quite impossible for the second photograph to repeat the precise relationship of these three factors Any measurement between X ray photographs taken at different times was, therefore, useless If the light were not absolutely at right angles to the bone the shadow would be lengthened It was possible to make a difference of three to four inches by thus altering the angle of the light

Dr MORGAN FINUCANE remarked that the treatment of fractures and surgical injuries had been completely revolutionised In the old days fractures were kept immobile and movements were utilised late, and he wondered if the new methods were responsible for the comparatively large numbers of ununited fractures reported nowadays He had had recent experience under the Workmen's Compensation Act of the deformities resulting from the too early removal of splints and too vigorous massage These deformities were extremely important from the point of view of compensation because, although the patient might recover sufficiently for the employer to call him "fit for work," he would be relegated to light work and so rapidly pass into the ranks of the unemployed He agreed that facts might easily be misinterpreted if X ray photographs were not taken under ideal conditions Modern methods of team work in diagnosis had the disadvantage that the diagnostic training of the student was apt to be neglected, the general practitioner being reduced to a machine, and his value depreciated in the public eye In his opinion far too much significance and erroneous significance, was attached to X ray photography in diagnosis and still more in prognosis The ability of the rich to produce radiographic evidence was apt to be a grave injustice to the poor

Dr B O'CONNOR recalled his association with Lord Lister in the old Edinburgh Infirmary in 1870, and claimed the honour of having been the first person to demonstrate in a London hospital Lister's methods of treating surgical wounds Six weeks had then been generally considered to be the time necessary for a fractured bone to acquire some degree of firmness. Modern practice, so far as he knew, did not neglect the conditions under which healing took place He agreed that X rays were put to a good deal of misuse If lay people knew what X rays showed, well and good; but they were simply told by an expert that certain shadows meant certain things which they did not understand, and then they expressed opinions about a subject of which they knew nothing

Dr G SLOT referred to cases of habitual fracture. Not many cases of ununited fracture were seen nowadays in hospitals, he said, and when they did occur it was often because the patients themselves had tampered with their splints Many bad results were due to the neglect of patients to follow instructions Massage was of great help to surgeons The two great medico-legal difficulties connected with fractures were (1) the difficulty in country practice of getting an X ray examination, and (2) the difficulty of assessing the exact amount of pain that a patient felt Then there was the important question of arthritis—how far the fracture caused it Lastly, some fractures, especially those at the ankle, often occurred as sequelæ to an accident, and not at the time of the accident itself

Dr KNYVETT GORDON said that nobody could tell how long a given fracture would take to heal. It depended on the calcium metabolism of the individual, which in turn depended on various factors not easily estimated

The PRESIDENT remarked that some judges forbade X ray photographs to be produced by anyone but the person who had taken them This was a very important ruling, and one calculated to serve the ends of justice He spoke of the frequency with which radiologists gave conflicting evidence about the same pictures Many things could be read in X ray photographs The exact length of time it took a fractured bone to unite depended on factors of personal health, heredity, and the like The legal aspect of fractures did not end with union; if a joint were involved it was necessary to consider the man's capacity for work afterwards

Sir LENTHAL CHEATLE, replying, said that if a fracture did not unite within a reasonable time it had generally been treated badly He thought that a fracture healed most quickly if the limb were massaged and not moved Immobility and massage were not incompatible.

Reviews and Notices of Books.

AN OUTLINE OF ABNORMAL PSYCHOLOGY

By William McDougall M B , F R S , Professor of Psychology in Harvard College London Methuen and Co , Ltd 1926 Pp 572 15*s*

The publication of a book by Prof William McDougall is an important event in the history of psychology He takes his place among the few great writers in this science, not only by reason of his widely-ranging intuition, his clear incisive mind, and his genius for the practical application of what both these qualities teach him, but also because he can express himself in intelligible language The most formidable hindrance to the propagation of the doctrines of modern psychology has always been the failure of its exponents to make people understand what they are talking about Prof McDougall is gifted with the power to interpret for English-speaking readers both what he has made out of the teaching of other pioneers and what he has added to it from his own study and reflection. A few years ago, in his "Outline of Psychology," he gave the world an interpretation of the laws which govern the normal psychology of the human mind Now he extends his field to the consideration of mental disease, in a twin volume to the first, the two forming one complete treatise He has therefore taken an important step towards bridging the gulf between academic or speculative psychology, and abnormal or pathological psychology—the gulf between what ought to be and what is For no man is wholly sane or normal, and the knowledge of what ought to be is futile unless balanced by the patient and humble study of the ills which afflict in varying measure the mind of every man Hitherto the gap has remained practically uncrossed. The academic psychologists have concentrated on their laboratory experiments and the physicians on mental disease Freud's great essays in psychopathology merely made the dissension triangular, for he neglected not only academic psychology on the one hand, but also the proven facts of neurophysiology on the other Prof McDougall has here made a splendid attempt to bridge all three chasms, and no one could have better qualifications for the work of which this book is the expression and the fruit Prof McDougall is nearer to earth than Jung, but less rigidly mechanistic than Janet Holding the "dynamic" view of psychology, he believes in a force which manifests itself in behaviour, but, unlike the mechanists, he maintains the conative essence of this force All behaviour is, for him, directed towards an end The sources of power are the instincts, its channel the emotions, and its emotional-conative activity colours every event in mental life, even the most purely intellectual We are not, however, simply machines The structure of our minds has something in common with that of a complicated machine, but the machine has a controller, a driver, in the conscious self This "self" Prof McDougall wisely does not attempt to reduce , he leaves it as the lowest common denominator of the whole problem of life, as it has always been left in every metaphysic Of its existence he has no doubt, he is therefore sharply defined as an autist

It is not until the end of his book that we reach the definite statement of what he conceives to be the nature of human personality which he holds to be not simple, but multiple Every activity of the body and mind is presided over by a distinct personality, a "monad," which works to a definite purpose The mind is not a machine, with different parts, but a hierarchy consisting of an incalculable number of members, all related to one another in various kinds of function or degrees of command and submission, but all subject ultimately to the self, the conscious monad Every monad has its sentiments and ideas every monad draws power from the instincts and lives its own life, but the conscious self, fed by all the instincts and motivated by the self-regarding sentiment, is by nature intended to be the king of them all Functional disorder is the inability of a monad or monads to carry out their work efficiently, or the dissociation of a number of monads from the community, or the failure of the self to regulate the kingdom Schizophrenia, the psychological basis of dementia præcox, occurs when the kingdom has never been properly integrated by the formation of an adequately strong sentiment of self-regard This conception enormously simplifies much that has hitherto remained obscure

Prof McDougall covers the whole range of functional mental disorder, including even those conditions where the endocrine system is proved to have undergone some change, for he rightly holds that the two systems, glandular and nervous, react on one another to such an extent that the cause-effect relationship between them is indefinable in the present state of our knowledge He classifies his disorders into two groups those due to dissociation (hysteria) and those due to neurasthenia (anxiety, obsession) This agrees roughly with Kraepelin, and the association of the latter two, where Kraepelin distinguishes them, does not prejudice an accurate estimate of their nature He recognises that schizophrenia is not in itself a neurosis, but a defect upon which a neurosis of nearly any kind may supervene Of his attempts to bridge the gulf between neurology and psychopathology, perhaps the two most striking examples are his work on the extravert-introvert scale and his neurological mapping of the complex Jung distinguishes between introverts and extraverts, but makes no attempt to explain the difference McDougall says that every individual has a place somewhere on a scale, at one extremity of which is the ideal introvert and at the other the ideal extravert, and that life tends to push everyone towards the other extreme from that near which he starts That the introvert has relatively low and the extravert relatively high synaptic resistance is shown by the difference in their reaction to various ocular tests Alcohol, he finds, encourages extraversion and the alkaloids introversion The extravert's brain is more liable to morbid dissociation than that of the introvert, because it is normally in that state of relative dissociation which the introvert's brain reaches under alcohol The position of any subject in the scale is a function of some quite general property of his nervous system and is probably determined by "some chemical influence like that of a hormone or endocrine secretion, or some complex chemical resultant of the general metabolism" The neural scheme of the complex is a masterpiece of inductive thought, and postulates what amounts to the short-circuit of a given system of cognitive cortical dispositions away from all other systems

It is possible to criticise a work of this magnitude and authority only with the greatest diffidence The bias of the author's interest is on the side of the dissociative disorders, and this has led him to allot a large amount of space to their discussion and to the description and consideration of hypnosis, which he regards as one of the most valuable means to the experimental study of the mind But he has allowed his chapters on hypnosis and suggestion to become separated from those on alternating and multiple personalities, which is rather confusing for the student It is a pity, also, that he has to confess himself unable to follow Jung's type-classification, which has simplified psychology for so many people A graver defect is that far too much space is occupied with destructive criticism of the views of Prof Freud An analysis of the Freudian teaching is an indispensable part of the book, but in thus condemning so many of the implications and inferences of the pan-sexual theory Prof McDougall has gone too far to the other extreme, and unduly restricted his view of the scope of the sex-instinct in human motives Nevertheless, the book provides an honest and clear-sighted review of the whole field of psychopathology, *expressed in a* medium of great power, persuasiveness, and lucidity

Clinical Physiology

By R J S McDowall, D Sc , M B , F R C P Edin , Professor of Physiology, King's College, University of London London Edward Arnold and Co 1927 Pp 424 21s.

THOSE whose study of physiology took place some years ago, whether they be senior students, practitioners, or consultants, should welcome Prof McDowall's book For he covers an enormous subject with a simplicity of language and with such thoroughness that the clinician will find interest in numerous chapters whatever may be his particular bent It is inevitable that such a work should be uneven, and if we would cite the chapters dealing with the circulation, special senses, and nervous system as being of especial excellence, it is but right to point out that those dealing with the kidney and the endocrine glands are of a lower standard The foreword by Prof Halliburton, in which he extols the value of physiology to the physician, very rightly indicates the value of the book as a whole

Physiology and Pathology

Traité de Physiologie Normale et Pathologique Edited by G H ROGER Vol VII , Blood, Lymph, Immunity Paris Masson et Cie 1926 Pp 502 Fr 65

THE energy of Prof Roger is inexhaustible He has organised the production of a great work by many authors in 11 volumes which shall survey physiology in a most catholic fashion, taking into its view invertebrates at one end of the scale and sick persons at the other. It is intended to be a book which shall secure that the doctor's work is founded on a broad biological foundation and that the biologist shall know something of the valuable lessons which practical medicine has to teach him Such an ideal cannot, of course, be fully realised on earth, but judging from the present volume the work will be of use and interest and well worth reading, if only because the French points of view differ in such a salutary way from those to which we are accustomed The most notable sections in this instalment are those by J Bordet (95 pp) on immunity antigens and antibodies which is a first-rate summary of the mature views of a master, and by Ch Achard (56 pp) on tissue fluid or, in the convenient French terminology, the "systeme lacunaire" Transfusion and its indications are dealt with by P Emile-Weil, and L Cuénot describes the respiratory proteids of the invertebrates The rest of the blood is discussed by J Jolly and others, and there is a special section on hæmorrhage , the general level of this series of articles is not particularly high Other chapters cover lymph and lymphatic glands, and A Besredka discusses anaphylaxis along lines which he has made familiar

Physiology and the Surgical Treatment of Pain

Die Leitungsbahnen des Schmerzgefuhls und die chirurgische Behandlung der Schmerzzustande By Prof Dr O FOERSTER, Breslau Berlin and Vienna Urban and Schwarzenberg 1927 With 104 illustrations Pp 360 M 19 50

AMONG the select company of neurological surgeons Prof Foerster of Breslau holds an honoured place, gained not merely by his clinical experience but by his able researches as a physiologist and experimentalist These he brings into contribution in this noteworthy monograph on the physiology of pain and its surgical treatment

Possibly the most interesting section deals with the nature of pain and its physiological correlates A careful review of the problem reveals not a few questions in respect of which finality is far from having been reached, notably that of the possible interassociation of the vascular system with the sensation of pain The author here adduces fresh evidence in favour of such a connexion, to which the neurologist would do well to attend A minute study is also made of the phenomenon of hyperpathia, by which is signified an appreciation of pain in consciousness altogether disproportionate to the stimuli originally arousing that sensation Next, the anatomical basis of pain-conduction is subjected to a most detailed scrutiny, and various gaps in our knowledge are pointed out Data derived from clinical medicine and surgery are underlined as suggesting that some impressions concerned with the appreciation of pain pursue a somewhat devious route by the sympathetic chain before entering the cord at high levels, and an interesting study is made of the possible differential diagnosis between root pains and posterior horn pains —a point of some practical importance In the second part Prof Foerster examines at great length the appropriate surgical treatment of such difficult problems as the visceral crises of tabes, visceral neuralgia in general, amputation neuromata, varieties of radiculitis, headache, and so on In all of these he brings to bear for their solution a fine combination of physiological knowledge and clinical acumen, to which we may believe his technical skill will add in practice a component of value There is food for thought in this scholarly contribution to the perennial topic of the successful treatment of painful conditions, and its appeal is unusually wide It is just as meritorious for its suggestiveness and the sidelights it throws on still vexed problems as for its accomplishment

The Student who Smokes

By J ROSSLYN EARP London H K Lewis and Co , Ltd 1927 Pp 61 5s

LAST year some £53,000,000 were added to our national receipts by our habit of smoking Does taking tobacco do us any good—physically, mentally, or spiritually ? Does it do us any harm ? Dr Earp has endeavoured to advance towards an answer to these very difficult questions by intensive study in a limited field, and has analysed the habits of the students at Antioch College, Ohio, in relation to their physical and intellectual performances He subjects his data to critical statistical examination (the rationale of which he also explains for the uninitiated) and discusses them with a fairness and absence of bias which might with advantage be imitated in more pretentious works on social questions. One conclusion emerges quite clearly that the habit of smoking is associated with inferior scholarship. He shows also that students who inhale are inferior to those who smoke less thoroughly Apart from this piece of evidence, there seem to be no satisfactory grounds for choosing between the alternatives that scholastic inferiority is due to smoking, that smoking is due to scholastic inferiority, and that both are due to the nature of the individual The only thing to be done is to try experiments on a large scale , we hope this will be achieved

Fermentation

Le Problème des Fermentations Les faits et les hypothèses By M SCHOEN, Chef de laboratoire à l'Institut Pasteur Paris Masson et Cie. 1926 Pp 199 3s

THE problem of fermentations, as M Schoen points out, is of *unceasing* interest, and although so many papers have been written on the subject by leading workers in the field of biological chemistry, a vast area still remains open for investigation M Schoen reviews the work which has already been done on this problem , unfortunately, however, his monograph contains more hypotheses than facts He opens with an account of the main points of Pasteur's work and shows how his theory that fermentation is *the result* of life without free oxygen, and that, besides the two principal products of fermentation, alcohol and *carbonic acid*, glycerine and succinic acid are also formed, has been confirmed by experiments The monograph proceeds to consider chiefly alcoholic fermentation, but bacterial fermentation is not neglected, and the author shows how the different types of fermentation are united

The book forms a useful review of the work on the subject, as Prof Fernbach says in the preface, to keep in touch with continuous scientific developments it is necessary from time to time to look back on the work already covered, and M Schoen's monograph will, therefore, be of service to those who are interested in the question of fermentation from any aspect.

DRUGS AFFECTING THE HIGHER BRAIN CENTRES

Phantastica die betaubenden und erregenden Genussmittel Second enlarged edition By Prof Dr L LEWIN Berlin Georg Stilke 1927 Pp 465

THE main title of this book can convey nothing to English ears, and the subtitle, though more suggestive, is difficult to translate satisfactorily The book itself, however, has well-defined limits It treats on all drugs that affect the higher brain centres, whether these drugs be taken for medicinal purposes or for pleasure Morphia, cocaine, Indian hemp, alcohol, hypnotics, camphor, caffeine, and tobacco, with their parent drugs and their derivatives, are discussed at length, as well as many less known drugs with similar actions The book deals, then, with habit-forming drugs, it is largely a warning against the use of such drugs, and depicts in ghastly colours the results of drug addiction The work is written in popular terms as a further subtitle "für Ärzte und Nichtärzte" suggests, neither the medical nor the psychological side of drug addiction is treated in a deeply scientific manner, but there is much interest in the history of the drugs, in the comparison of modes of use and of symptoms, and in the accounts of drugs used in savage countries and those used for similar purposes in civilised lands The series of substances dealt with vary widely in action, but are connected to form a well-defined group, the use and abuse of members of this group afford one of the great problems of modern times, and a comprehensive work of this kind has therefore a real interest

TEXT-BOOK OF MATERIA MEDICA FOR NURSES

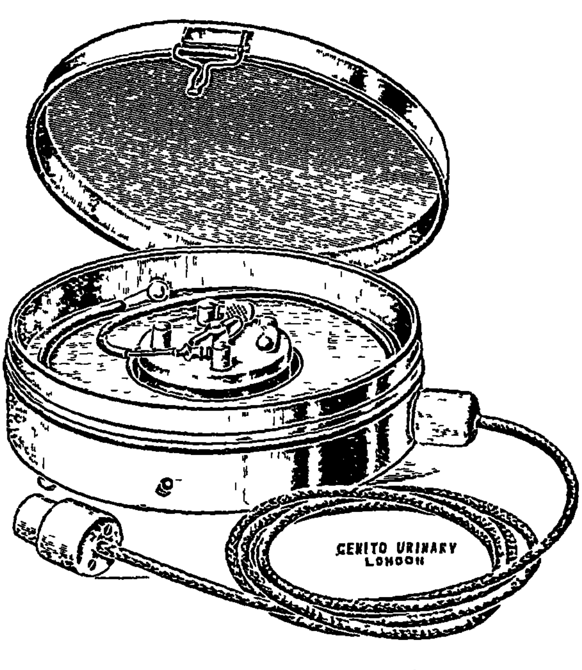
Eighth edition By LAVINIA L DOCK, R.N, and JENNIE C QUIMBY, R N London and New York G P Putnam's Sons 1927 Pp 317 7*s* 6*d*

THE subject of materia medica is evidently taught to nurses in America in far greater detail than in this country We should be happy if the medical student knew all that is in this book Its general arrangement is according to the drugs acting on different systems of the body; there are also notes on drugs generally, poisons, chemistry, physiotherapy, laws relating to dangerous drugs, watering-places Most of the matter written under these headings is clear and good. The dose of cocaine 2 gr, given on p 40, seems high; the doses of tuberculin apparently intended to represent the apothecaries' and the metric system—namely, 1/250–1/65 gr and $\frac{1}{2}$–1 c cm—do not seem to correspond Though most of the pictures are good we should certainly fail to recognise poppy and monkshood from the prints given Many of the European watering-places mentioned are of small importance Generally, the book is well expressed, neatly published, and quite interesting.

New Inventions.

AN ELECTRIC STERILISER FOR URETERAL CATHETERS

THE steriliser consists of a circular box, 7 inches in diameter and 2 inches deep, with hinged lid. A small container for formalin tablets is fixed to the centre of the base of the box It has an air-tight lid, which is held in position by means of a winged nut, and an inlet for compressed air which terminates on the outside of the box in a valve Two electric heaters lie immediately below the formalin container They are wired up to a special plug fitting in the side of the box This plug can be connected to the ordinary domestic electric supply, and either direct current or alternating current can be used Surrounding the formalin container is an annular tray on which the catheters rest Below the tray are racks for holding a 10 c cm Record syringe, spare metal caps, and a wire for cleaning the catheter nozzles, all of which are sterilised by means of the formalin vapour The lid of the formalin container is furnished with four metal nozzles, to which the catheters are attached by means of adjustable connexions Each catheter is inserted, before sterilising, into a rubber tube, long enough to enclose it completely The end of the tube where the eye of the catheter lies is closed by a wooden peg The proximal end of the catheter is then attached to the nozzle on the lid of the formalin container by means of the adjustable connecting piece and the apparatus is then closed and connected to lamp socket or wall plug When the current has been turned on for 20 minutes and the formalin vapour well liberated from the tablets, air is pumped into the formalin chamber through the valve in the side of the steriliser It forces the hot concentrated formalin vapour through the lumen of the catheter, down to its eye From this point it must travel backwards between the catheter and the rubber tube before it can escape into the body of the steriliser It has been found experimentally that catheters infected with non-sporing organisms (*Bacillus coli*, staphylococci, and streptococci) are sterilised even when air has *not* been pumped through the steriliser, but to kill the spores of the *Bacillus subtilis* it was necessary to increase the force and volume of the current of formalin vapour through the catheter by means of the air pump



This apparatus has been made for me by the Genito-Urinary Manufacturing Co, Ltd, 64, Great Portland-street, London, W.

J SWIFT JOLY, F R C S

THE LANCET.

LONDON, SATURDAY, JUNE 4, 1927

ROYAL COLLEGE OF SURGEONS OF ENGLAND POSITION OF THE MEMBERS

THE direct representation of Members on the Council of the Royal College of Surgeons of England, which has been advocated steadily for years in these columns, is forming the subject of an investigation by the Council, who have invited from the Fellows an expression of individual opinion The views of the Members have been registered clearly and frequently in the press, and at general meetings of the Fellows and Members Those engaged actively in promoting the direct representation of Members on the Council may not form a large numerical proportion of the Members, but the recognition by the Council that this fact provides no valid argument for a refusal of discussion will be welcomed as fair and statesmanlike The protagonists of a real movement are often few in number, but, if the movement is real, they speak and act, at least equally often, for large numbers who will benefit by any success which may attend their efforts In many discussions of the arguments for reform ranging over three-quarters of a century, we have had to record maladroit handling of the different situations as they arose, both by the friends and the enemies of the constitutional change which is sought We have now a new situation, for the first time the move comes from the central authority of the College

About 30 years ago a majority of the existing Council had expressed themselves in a greater or less degree, privately or publicly, as well disposed to the views placed before them by both Members and Fellows for extending the rights of the Members But benevolent intentions are prone to disappear partly as the results of further reflection, and more often—and also more creditably—help that has been promised falls away when the champions of the change are unable to formulate a scheme by which their objects can be obtained in a practical way A discovery of the method is still awaited by which representation of the Members on the Council can be brought about without undue disturbance of the functions of the College, as set out in the charters—namely, to romote the science of surgery and encourage in cademic and professional ways its methods of ractice Many declarations have been heard and ave been received with sympathy and applause, to e effect that it is anomalous in these days for a rporation to be governed without reference to the ajority of those who form it, but so far the concrete ggestions for altering the position have been unable survive criticism It is legitimate to hope for a fferent result from the present action of the Council asking the Fellows, who have elected them to their ats, for a definite expression of opinion, especially cause the Council has placed before the Fellows detailed statement of the situation That nonssumus attitude has gone which was founded on the sumption that, because only a few Members voiced y demand for the right to vote, an inquiry into the stice of the demand was unnecessary, while the llows will be dealing with the matter after being rnished with the basis for forming their judgments The statement placed before the Fellows commences with a brief historical sketch of the incorporation of the College, of the granting of its charters, and of its functions, it then sets out the financial arrangements made with the Royal College of Physicians of London for a Joint Examining Board, and details the rights and privileges of the Members and Fellows as at present enjoyed Here it is indicated that the positions of both are identical, save in the important matters that the Fellows vote at the election of members of the Council, they only are eligible to sit on that Council, and they only can be members of the Court of Examiners, or appointed examiners in anatomy for the Fellowship of the College and in the surgical section of the Board of Examiners in Dental Surgery There follows an enumeration of the claims of the members, as put forward since the institution of the annual meeting of Fellows and Members in 1885, from which date resolutions have been passed almost every year in favour of giving Members some form of direct representation on the Council The list of claims is published with the remarks of the Council directed to the substance of each claim appended Some of the statements which have been repeatedly made in behalf of the Members are to some extent traversed by the Council, especially is it brought forward that the majority of the Fellows taking part in the elections of the Council are themselves in general practice, so that the interests of Members who are in general practice may be taken to receive the care of the Council, as far as the charters empower the College to promote such interests It will be unfortunate if the statement of the Council to the Fellows is regarded by the Members as an adverse prejudgment of their claims, just as it will be unfortunate if the Fellows of the College resolve to give their votes without looking at all the circumstances It may be that some parts of a strong demand for reform have no historic basis or have been made the subject of exaggerated dialectics, but these are not things which should determine inaction Opportunities of progress must not be sacrificed out of any considerations of precedent We hope that the vote of the Fellows will be a large one, and that the result will be a working scheme for the effecting of the change that is sought The difficulties of producing such a scheme will be many and far-reaching, but they will not be insuperable if the Council receives a clear instruction from the Fellows to proceed

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LEGAL LIABILITY IN CERTIFYING INSANITY

TWO judgments of particular concern to the medical profession were given on May 27th, both relating to the legal liability of a practitioner to be sued for alleged negligence in certifying a patient to be a lunatic The first in importance was the final decision of the House of Lords in the protracted litigation of Harnett *v* Fisher, whereby Dr FISHER succeeds, and the previous judgments in his favour by Mr Justice HORRIDGE and the Court of Appeal are reaffirmed The second case was that in which the jury gave Mrs DE FREVILLE a verdict of £50 damages in her action against Dr A V DILL Certain legal points remain to be argued here in the light of the review of the law by the House of Lords in Harnett *v* Fisher, Dr DILL has lost upon the issue of fact, but the comparatively small amount of damages awarded is significant, the main interest of the case is the sympathetic understanding of the practitioner's difficulties in lunacy matters which is revealed in Mr Justice MCCARDIE's summing-up to the jury

The legal issue in Harnett *v* Fisher is well known Mr Harnett, who argued his appeal in person and well, was certified to be a lunatic on Nov 10th, 1912 He issued a writ on May 31st, 1922, with the result that he was awarded £500 damages, the jury finding that he was not of unsound mind when certified and that Dr Fisher had not acted with reasonable care in certifying him But there was one objection to this result which proved fatal to Mr Harnett's claim The Statute of Limitations, passed more than three centuries ago, enacts that an action of this kind must be begun within six years of the existence of the cause of action The object of the Act, as Lord Sumner observed, is to protect defendants against belated claims—not merely defendants who have a good defence and to that extent need no protection, but also defendants who have not a sufficient answer or who, owing to lapse of time, cannot count on making it Mr Harnett's action was statute barred, he had not begun it within the six-years time limit It is true that the statute contains an exception in favour of persons who are under a disability and specifically names amongst these any person who is *non compos mentis* Mr Harnett, however, could not bring himself within this exception It had been of the essence of his claim, and the jury had found in his favour, that on the day when Dr Fisher certified him he was of sound mind, it was not established that he had ever been otherwise If he had never been *non compos mentis*, then the six year time-limit ran from Nov 10th, 1912, and his action, begun too late by several years, must fail Mr Harnett argued that, under and for the purposes of the Lunacy Act, he had been made a lunatic and was treated accordingly, both in person and property, and that, for the purposes of bringing an action, he was as much disabled as if he had in fact been *non compos mentis* He urged that the statute should be liberally interpreted so that his practical disability should be deemed a disability under the Act Against this argument it could have been said that, about a month after the reception order was signed, Mr Harnett was allowed to leave the asylum provisionally and was actually at large for two days, moreover, after his return he frequently communicated with his solicitor and occasionally saw him personally But the House of Lords brushed these considerations aside The question was not one of Mr Harnett's status as a lunatic, but of his mental condition of sanity or insanity, and this point had been finally disposed of by the jury's verdict in his favour The House of Lords was not concerned to justify what Parliament had enacted in 1623, or to regret that it had gone no further to assist persons in Mr Harnett's situation The tribunal had merely to interpret the law, and on that interpretation Mr Harnett could not succeed

There remained one subsidiary point which is important to all practitioners who find themselves in Dr Fisher's position During the argument on March 3rd Lord Blanesburgh suggested that the wrong statutory limitation had been relied upon by Dr Fisher His lordship remarked that possibly the Jacobean statute of 1623 had nothing to do with the matter. Section 331 of the Lunacy Act of 1890 prescribed a special period of limitation in the case of an action under Section 330, and that period was one year after release On this hypothesis Mr Harnett's action was not time-barred, as it was begun seven months after he regained his liberty It was true that Section 331 of the Lunacy Act was repealed by the Public Authorities Protection Act of 1893, and there was some question of the absolute extent of the repeal Assuming that the repeal was complete, then the law applicable was the Public Authorities Protection Act which prescribes a special time limit of six months, and again the result was that Mr Harnett was out of time Lord Blanesburgh referred to this point in his judgment on May 27th, in which he reached the same conclusion as the other members of the tribunal, but by a different line of reasoning The House of Lords allowed Dr Fisher to amend his defence so as to plead the Public Authorities Protection Act of 1893 as well as the statute of James He thus had two strings to his bow Lord Sumner, however, and others of their lordships disagreed with Lord Blanesburgh and regarded the 1893 Act as inapplicable, the Act of 1623 being the Act which really applied The reasoning here deserves close study. The Public Authorities Protection Act applies to actions brought for doing, or neglecting to do, an act under any statute of the kind described—in Dr Fisher's case the Lunacy Act The only act by Dr Fisher of this nature was the signing of the certificate in the prescribed form But, said Lord Sumner, the gist of Mr Harnett's claim was not the signing of the prescribed certificate, but the alleged lack of care in examining his mental state and in forming an adverse opinion about it The negligence could only arise in that connexion, it was breach of a common law duty, not breach of a statutory duty, the negligence, if any, was that of a medical practitioner acting in the course of his private practice Anything else was either a separate cause of action under the Lunacy Act for which no damage could be recovered, since the detention order was the order of the justice and not of the doctor, or else it was a mere item in the damages claimed as flowing from the negligence This view expressed by Lord Sumner usefully underlines the judicial responsibility of the magistrate which is by statute interposed between the alleged lunatic and the certifying doctor, but the implications of the argument are far-reaching It makes a considerable difference to the practitioner whether he is protected by a time-limit of six years or by one of only six months Great interest will therefore attach to any further explanation of the legal position which may be forthcoming if Mr Justice McCardie is asked to consider the application of Harnett *v* Fisher to the case of de Freville *v* Dill

If Parliament contemplates any change of the law of medical liability in the certifying of insanity, it will no doubt be contended that Mr Harnett was unfairly treated in receiving all the practical disabilities of the status of lunacy and yet being debarred from any legal concession At the same time our legislators must not forget what Mr Justice McCardie has been saying to the jury in the action against Dr Dill Litigation of this kind has not been infrequent in recent years, and medical men may decline to give certificates if they thereby become subject to actions in the law courts and are embroiled in embittered family strife with which they have no concern It is a serious matter, said the learned judge, that the Lunacy Acts contain no definition whatever of insanity, unsoundness of mind or lunacy, they provide no test, they set no standard, and they give no guidance The keynote is first the welfare of the patient, and secondly the public safety which may require that the patient be put under care and treatment "A doctor who is called in to deal with an alleged lunatic is dealing with the most difficult subject known to the medical profession, the forms taken by unsoundness of mind are so many, diagnosis and classification are difficult, and not only do the forms and symptoms vary, but each varies in degree, in gravity, and intensity, symptoms and outbreaks may be intermittent and may vary year by year, month by month, and day by day" Some observations by Lord HALDANE in Everett v Griffiths were opportunely quoted —

"To-day he is sane in his conduct and probably was so very soon after the occurrences in question But the point is whether at the time of those occurrences he had so lost his capacity for self-control as to be, temporarily at least, to all appearance of unsound mind within the meaning of a statute which takes account of his relations to others as well as to himself"

The jury, added Mr Justice MCCARDIE, must remember the Lunacy Acts have to be administered, and certificates have to be given, not only by London specialists and other experienced practitioners in great cities, but also often by ordinary country doctors It is one thing to come to a decision upon the accuracy of certification after a seven days' hearing in court with evidence on both sides and the assistance of experts and counsel, it is another thing to come to a decision in a room in a country vicarage "A general medical practitioner gives no warranty of special skill or knowledge, he is bound to exercise due care, having regard to the skill and knowledge which he actually possesses" Fortunately, in Mrs DE FREVILLE's case against Dr DILL any suggestions of bad faith that might have been made against the defendant were withdrawn before the case was left to the jury The mere fact that such suggestions can occur will make medical practitioners the more reluctant to run the risks of undertaking certification under the Lunacy Act unless the medical profession is to be assured of a reasonable immunity under the law

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THE INTER-STATE ASSEMBLY

THE Inter-State Post-Graduate Assembly of North America have held their annual congress in London this week The session was opened with addresses by the Marquis of READING and Lord DAWSON OF PENN, and as will have been gathered from the announcements last week of the various functions, the visiting doctors from the States and from the Dominion of Canada have been offered in London large facilities for a post-graduate gathering Our medical organisations and institutions have coöperated to welcome the visitors from scientific and social aspects alike The lectures delivered during Wednesday, Thursday, and Friday (to day) at Dartmouth House, Charles-street, the headquarters of the English-Speaking Union, were representative of British practice to-day in medicine and surgery, and the opportunities afforded to the members of the Congress for seeing the theories exemplified and the techniques practised at the metropolitan hospitals have been numerous On each day special programmes have been arranged, to be carried out at many of our best known general and special institutions, where the staffs have attended to give appropriate demonstrations, while the range of operations performed for the instruction of the audiences was large and instructive The importance of these gatherings is, of course, proportional to the number of those who attend, having before them the great object of scientific coöperation The attendances at receptions and the inspection at museums and collections should be treated as agreeable interludes, the real business of these international assemblies is to prove that medicine knows no national confines, and that all its followers have something to learn from and something to teach to their colleagues

Annotations.

"Ne quid nimis"

CREMATION

THE Cremation Society of England, of which Prof Chalmers Mitchell is chairman and Dr H T Herring hon secretary, is taking steps to popularise the practice of cremation in this country Dr Herring opened a discussion on the subject at the recent sessional meeting of the Royal Sanitary Institute held at Bath At the Annual Conference of Cremation Authorities, held in Birmingham on May 25th, several speakers, including Principal C Grant Robertson and Sir John Robertson emphasised the economic arguments in favour of cremation The medical profession does not require to be convinced of the advantages of cremation on hygienic and æsthetic grounds, but the great cost to the community of earth burial is not sufficiently realised An enormous area of land which is badly needed for building sites, allotments, food production, and recreation must be set apart for cemeteries It is usually estimated that from a quarter to half an acre is required per 1000 inhabitants and that this suffices for only about 14 years, stated in another way, with a death-rate of 500,000 per annum, the area occupied for burial purposes would amount to 500 acres yearly in this country. The cost to the ratepayers amounts to hundreds of thousands of pounds a year, for most authorities have a considerable annual deficit on their cemeteries: in Sheffield the loss amounts to £6000 per annum, in Manchester to £5736, in Blackpool to £4411. A year ago Sir Kingsley Wood, in answer to a question in the House of Commons, stated that the total sum which local authorities in England have been authorised to borrow for the provision of cemeteries during the preceding period of seven and a half years was £1,248,905 The burden on the living increases in geometrical ratio, and before many years municipal authorities will be compelled to face the possibility of refusing facilities for burial Experience abroad, notably in Switzerland and Czecho-Slovakia, shows that the practice of cremation, when recognised by the State, is accepted as a substitute for burial without question Municipal crematoria are for the most part self-supporting and if cremation were widely adopted the individual expense would be greatly reduced

The only serious argument against cremation is the alleged danger of destroying the evidence of crime in cases in which foul play may have caused death Experience and authoritative opinion show that the argument has no substance There are now 16 crematoria in England and Wales, and more than 37,000 cremations have taken place, yet in no case has any question subsequently arisen as to the cause of death. The stringent requirements which must be complied with before a body is cremated include the production of three statutory certificates and declarations, from the executor or nearest relative, the medical attendant, and an independent medical practitioner of standing Dr Herring has recently appealed to medical practitioners[1] generally to qualify for the position of granting this second certificate Considerable powers are vested in the medical referee appointed by the Cremation Authority, who alone can give the order for cremation to take place He is enjoined not to allow the cremation to proceed unless he is satisfied that the death has been duly registered by the production of a certificate of death, that the application and certificates are in order, that due inquiry has been made by the persons giving the certificates, and that the fact and cause of death have been definitely ascertained In particular, if the cause of death given in the medical certificate is such as may be due to poisoning, violence or illegal operation, to privation or neglect, he shall require a post-mortem examination to be held, and if that fails to reveal the cause of death shall decline to allow the cremation unless an inquest be held and a certificate given by the coroner He may in any case decline to allow the cremation, and is not bound to state his reason for refusal Lord Salvesen, who speaks with high judicial authority, considers these requirements so stringent as for all practical purposes to exclude the possibility of a body being cremated which has been the victim of foul play "No person," he stated in his address at the Birmingham Conference, "who had been guilty of poisoning the deceased would ever resort to cremation as a means of concealing his crime If he was in collusion with the medical attendant, or had managed to evade his suspicions, he would scarcely run the risk of an examination of the deceased by an absolutely independent official, who might report that a post-mortem examination was required to disclose adequately the cause of death and whose duty it is to set about inquiries which, if there had been foul play, would almost inevitably reveal any suspicious circumstances attending the death Lastly, he would have to face the possibility of the medical referee requiring a post-mortem examination to be held, which in the case of mineral poisoning would at once reveal the cause of death" Contrasting these requirements with those for ordinary burial, he added "A person who wished to conceal that the deceased person had perished from foul play would have no difficulty in many cases in obtaining a burial certificate, which affords a very inadequate safeguard against the body being put under the earth without the cause of death having been accurately ascertained"

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[1] THE LANCET, May 14th, p 1035

At the present time, as the Registrar-General's figures show, some 5000 deaths a year are not certified by a registered medical practitioner at all, and in only about 40 per cent of the cases of death certified have the medical men seen the body after death Both the cause and the fact of death must be verified in every case before cremation is permitted

VOLUNTARY SEXUAL STERILISATION

ADVANCED proposals for legalising voluntary eugenical sterilisation are set out in an article by Mr H H Laughlin, of the Carnegie Institution of Washington, published in the *Eugenics Review* of April The author logically points out that laws for sterilisation are a mere extension of the principle of statutes which authorise the segregation of the insane and feeble-minded in custodial institutions, that on the long view of racial aspects sterilisation is fully as important as segregation, that voluntary sterilisation, while it might well be encouraged, must be subject to some measure of social control to prevent abuses, and that there already exist analogous laws governing surgical operations under which abortion is prohibited except for therapeutic reasons After tabulating the classes of defectives and others which should not be allowed to reproduce, and assigning in each class the responsibility for the initiative to prevent reproduction, Mr Laughlin formulates a draft statute for the control of voluntary sterilisation The main safeguards in his proposals are three First there should be a signed and sworn statement by the particular subject (or, if the subject is under age or otherwise incompetent, by the subject's parent or guardian) testifying to the belief that he possesses hereditary qualities of which the propagation would tend to lower the inborn hereditary standards of the nation Secondly, no surgeon is to operate for the purpose of sexual sterilisation unless he has been furnished with a second document signed and sworn by a licensed medical practitioner or by a trained biologist possessing approved qualifications, to the effect that the signatory has investigated the heredity of the particular subject and has found that he has hereditary qualities which, in the investigator's opinion, would tend to lower what have already been described as the inborn hereditary standards of the nation Thirdly, the surgeon would be required to make a return as to the nature and date of the operation, the name of the patient, and the surgical and physiological result All other sexual sterilisation by surgical or medical means would be prohibited except for therapeutical purposes as interpreted by established surgical or medical practice

These proposals will have their value as propaganda to draw attention to eugenic ideals, but it is safe to predict that it will be a long while before an Act of this nature is found in the English statute-book. Recently a mild endeavour to secure the better segregation of defectives has been resisted in Parliament on the ground that it is a gross infraction of the liberty of the subject, and even on the further ground that it is an objectionable piece of class legislation It is indeed doubtful whether this country is more ready to contemplate proposals for the control of voluntary sterilisation than to impose any form of compulsory sterilisation upon degenerates even after the most careful judicial and medical inquiry We are still in some uncertainty as to the working of the laws in certain American States where compulsory sterilisation is authorised Sterilisation does not destroy sexual impulse It may even do harm by creating a false atmosphere of security in which defectives may be allowed at large when they should be segregated

METAL FUME FEVER

THE occurrence of chills among brass-founders has long been known, and the name of "ague" given to these attacks denotes that they occurred in the Middle Ages when tertian and quartan fevers were indigenous, and the term was still current Brass is an alloy containing about two parts of copper and one of zinc Copper melts at 1080° C, 300° higher than the temperature at which zinc becomes volatile The fact that dispute exists as to whether or not copper is toxic makes it certain that this metal does not possess any pronounced poisonous effects Zinc is also recognised as non-poisonous in itself, but when volatilised it combines with oxygen to form an oxide, to the inhalation of which the attacks of brass-founders' ague have long been ascribed in the trade The whole matter has recently been under investigation in the Harvard School of Medicine Evidence has been acquired not only that zinc possesses no toxic properties, but even that it occurs normally and regularly in the various organs of the body; in suitable dilutions it can be used as a stimulant to vegetable life Further researches are reported in papers which have appeared in the *Journal of Industrial Hygiene* for March and May Two investigators submitted themselves to freshly generated fumes of zinc oxide, which they inhaled while in a cabinet containing known amounts. The one inhaled during five minutes some 48 mg of zinc, of which about 24 mg. were retained, the other in 12 minutes inhaled about 74 mg of zinc of which about 34 mg were retained Both subjects experienced an attack of chills some 10 hours later In the one case the temperature rose to 102 8° F and in the other to 101 8° F, falling again to normal within 12 hours Both subjects were under close observation in hospital during the febrile period, and a leucocytosis was observed simultaneous with the rise of temperature This leucocytosis persisted for an appreciable length of time after the body temperature reached normal Some diminution also occurred in the vital capacity Brass-founders recognise that they become more or less inured to attacks of ague, but that they lose their protection after a period away from the foundry Similar results followed inhalation of fine particles, 0 4 micron in size, of zinc oxide powder, known as Kadox, but the pyrexia was less pronounced One investigator, while making determinations as to the amount of zinc oxide present in the air of a foundry, was exposed to the fumes and experienced, as usual, an attack of ague He followed up his observations the next day, when his exposure to the fumes was even greater than on the first occasion, but escaped a second attack The other investigator submitted himself in a cabinet to zinc fumes and experienced the usual attack of fever. The next day he again subjected himself to the same exposure, but on this occasion he, too, also failed to develop an attack The writers believe that the acquired resistance is related in some way to the acquired leucocytosis which accompanies the rise of temperature and persists for some 24 hours after this has fallen The Harvard investigators denote the condition as "metal fume fever", they find that exposure to other finely divided particles, such as copper oxide and sprays of compounds of other heavy metals, such as silver, mercury, iron, and antimony, have been reported as producing the same effect They tried the matter out by exposing themselves to fumes of magnesium oxide—a product of a light metal, fever accompanied by leucocytosis followed Possibly the condition is one brought about by exposure to the inhalation of minute particles of any kind, such particles may exert a physical effect upon protoplasm, causing a disintegration which is followed by protein absorption and pyrexia, an effect counteracted by the leucocytosis The whole subject is receiving further attention at Harvard

WOLF BOYS

Since the publication of an annotation on this subject in our issue of May 7th (p 984) we have received from Dr. W. H Coupland, medical superintendent of the Royal Albert Institution for the Feebleminded, a copy of Chambers's *Edinburgh Journal* for July 17th, 1852, containing an unsigned article on an anonymous pamphlet entitled "An Account of Wolves Nurturing Children in their Dens. By an Indian Official," which was published by one Jenkin Thomas, printer, in Plymouth in that year. Reference was made in The Lancet of March 24th, 1888, to this publication, and we note that in the correspondence in the *Times* that was evoked by the appearance of the wolf boy of Allahabad Sir R. Armstrong-Jones alludes to our contribution, although he misquotes the date as 1889 In considering this "brief, rough pamphlet, published in a provincial town" in 1852, the writer in the *Edinburgh Journal* is able to recognise "both in the manner and matter the pen of Colonel Sleeman, the British resident at the court of Lucknow, whose invaluable services in putting down thuggee and dacoitee in India we have already described" Recently the correctness of this literary perspicacity was confirmed by Lieut -Colonel J L Sleeman, of Hampton House Hereford a grandsom of the famous resident, who in a letter to the *Times* of May 10th last states that the "unknown writer" of the Plymouth print was none other than his illustrious grandfather Except for the article in the *Edinburgh Journal*, ever hospitable to the unusual and the bizarre, little attention seems to have been given to General Sleeman's pamphlet, and it was not until the latter had reappeared, almost word for word, in Vol I of his "Journey through the Kingdom of Oude," published in London in 1858, that England grew aware of these Indian wolf children Serious students of philosophy then became intrigued in the subject, and grave professors of mythology and natural history endeavoured to obtain some common ground for its discussion Dr Ireland's examination and conclusion published in July, 1874, remains, however, irrefutable He studied the histories of the nine recorded cases Six of these were described by General Sleeman, first in his pamphlet and later in his book, one was under the care of Dr Whishaw, of Lucknow, as noted in our previous annotation, details of two others occur in some "Notes on Children found Living with Wolves in the North-West Province of Oude," by Mr V. Ball, of the Geological Survey of India as printed in the *Journal of the Asiatic Society* (proceedings for June 1873) Of these cases it is said "Dr Whishaw's one is of course out of the question He was neither fostered by wolves nor was he an idiot and one of Sleeman's cases is stated to have been simply rescued from wolves" All the remaining cases Dr Ireland declared to be cases of idiots "found wandering," as idiots wander in London to this day—even in London with the most watchful and the best of social services in the world

MERCUROCHROME IN THE LABORATORY.

Mercurochrome, a soluble compound of mercury with dibrom-fluorescein, has been recommended recently as an antiseptic for intravenous injection in cases of septicæmia, ulcerative endocarditis and other general infections In the belief that it confers antiseptic properties on the bile, its use has been suggested in the treatment of typhoid carriers. The bactericidal action of this drug has now been investigated[1] by L Colebrook and R Hare, both in the test-tube and the living body Whilst their experiments are neither numerous nor cover the whole area in which bactericidal action might be manifested, they nevertheless should suffice to indicate any striking value possessed by the preparation In brief, their findings have been that mercurochrome, added to human defibrinated blood outside the body, in no way enhances the bactericidal power of the blood, that the intravenous injection of the drug does not increase the bactericidal action of the blood when tested shortly afterwards, and that no special antiseptic properties are conferred upon the bile by such an injection These results are of some importance, and should engage the attention of those who counsel the use of mercurochrome Whilst they are open not only to the objection of their scantiness, but also to the common criticism which may be levelled against this class of experiment in general—that it does not throw direct light upon the actual processes within the body—they certainly fail to indicate any antiseptic action of the drug within their obvious limits The fact that good clinical results have been recorded in cases of severe septic infection is possibly to be explained as a result akin to those obtained with eusol, with the non-specific intravenous injection of vaccines, and with the intravenous injection of other substances of high molecular weight These results are probably non-specific and due to the implication of some mechanism at present little understood

TREATMENT OF SNAKE-BITE.

Practically every part of the United States is inhabited by poisonous snakes, and in certain regions large projects for agricultural development are held back through the immigrants' fear of this peril New agricultural development means an increase in rodents and small animals which form the staple diet of the snake, and the hazards of farming in the tropics are very real Snake-bite therefore constitutes a distinct problem in public health, and the Mulford Biological Laboratories, of Glenolden, Pa, include an Antivenin Institute for the purpose of furthering knowledge of all animals poisonous to man and of developing means to prevent death and alleviate symptoms due to their attack This institute has just brought out its first *Bulletin*, which is to be a quarterly publication dealing with all the ramifications of snake-bite and kindred problems The editors aim at making it an authoritative source of information and a medium of popular education The issue opens with an article by Mr Raymond L Ditmars on the occurrence and habits of poisonous snakes The author acquits Maine and New Hampshire of the charge of harbouring these pests, but cannot altogether clear Vermont, as rattlesnakes are occasionally reported from there Rattlers extend well over the rest of the States, and the swampy southern districts are overrun by many other species It appears that copperhead snakes still exist within the actual boundaries of New York City and in many other eastern towns they are living very close to Main Street The writer describes more than a dozen kinds of rattler, as well as the copperhead, moccassin, and coral snakes The majority of northern snakes are well disposed and will not strike if unmolested, to their retiring habits alone does Mr Ditmars ascribe the rarity of bites among the silk-stockinged low-shoed "hikers" from the towns Snakes seem to dislike modern motor roads and are confined to the areas included by the highways In the south matters are very different Rattlers prowl over open areas of country and flash instantly into a fight instead of seeking a friendly crevice, an envenomed blow is driven before the intruder is aware of the enemy's presence Leather gaiters from knee to shoe give 90 per cent protection Mr L M Klauber gives more detailed descriptions of the south-western species of Crotalus, and maintains that in his district very few snakes will fight without considerable provocation His article is illustrated by photographs which should materially help in identifying the different reptiles Mr M L Crimmins contributes a note on Texas rattlers and describes the symptoms of a bite, which are primarily hæmolytic and secondarily neurotoxic Blood cells and other tissues are destroyed and gangrene is likely to follow a bite The San Antonio station recommends prompt application of a tourniquet, loosened for five seconds every 20 minutes to prevent gangrene, a cross-incision one-third of an inch deep, and soaking with 1/3000 permanganate The usual first-aid treatment is kerosene oil, and the 19 cases subsequently treated with serum were nearly all a day old and suffering from very grave symptoms Yet all recovered It seems therefore that anticrotalic serum is a valuable addition to the pharmacopœia of agricultural doctors in the States, and it is a pity that it is at present so rare that it can only be used to prevent death in grave cases and not to relieve suffering in milder ones Other more technical papers in this interesting *Bulletin* include studies of neotropical and African snakes by Messrs T Barbour and A. do Amaral We have in Great Britain no rattlesnake problem, but our native venomous reptile, the viper, is responsible now and then for a case of severe illness, more often still for much pain and alarm, and the rarity of its attack is no reason for ignoring the problem Where distances are so small it ought to be possible for some central laboratory to keep a stock of antiviper serum ready for use Its director at any rate will not have to emulate Major Scott, of the Fort Sam Houston Laboratories, who flew 2600 miles to administer antirattler serum in Texas

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[1] British Journal of Experimental Pathology, April, 1927

THE SIZE OF THE THYMUS

Evidence continues to accumulate that the discovery of a large thymus and ample lymphoid tissue elsewhere in the body does not satisfactorily explain an unexpected death in an apparently healthy child Dr Edith Boyd, in a communication to the Minnesota Pathological Society,[1] concluded from her studies that the "status thymico-lymphaticus" represents the normal thymus and lymphoid tissue of a well-nourished child This is in effect the same as the provisional verdict[2] of the joint committee appointed by the Pathological Society and the Medical Research Council to look into the matter, and we await the further and final findings of that committee with interest Ignorance of the normal body is a serious defect in all studies in morbid anatomy, in this particular instance it has naturally been rather difficult to believe that a few days fever or digestive disturbance or, indeed, illness of any kind, will cause such a marked wasting of the lymphoid tissue throughout the body that our conceptions derived from the average hospital case are quantitatively all wrong But there seems little doubt that this is actually the case, and the pathologist will have to look further than the thymus for the explanation of some of the tragedies which he is called upon to elucidate It seems that a large or abnormally persistent thymus is significant mostly in endocrine disorders which commonly fall on adolescents and young adults In exophthalmic goitre a persistent thymus is almost the rule, especially in young subjects, which corresponds with the experimental observation that removal of the thyroid hastens the natural involution of the thymus This is retarded by adrenalectomy, which may bring about actual regeneration, as is shown in a certain number of examples of Addison's disease Apart from such relationships considerable caution is necessary in charging the thymus with any primary vice of being too big

RISKS OF CHILDBIRTH IN VICTORIA.

The incidence of maternal mortality and morbidity has in recent years engaged the attention of the medical profession in Australia, as in other English-speaking countries Some time ago the University of Melbourne appointed Dr. R Marshall Allan as director of obstetric research for two years, "to inquire into the causes of maternal mortality and morbidity in Victoria, and suggest means to prevent or lessen the same" Dr Allan's interim report, which has now been issued, is based upon an inquiry which included (1) a statistical investigation, (2) an exhaustive study of domestic obstetric practice, involving personal interviews with medical practitioners and the inspection of all hospitals registered to admit obstetric cases, (3) clinical research. On a total of 35,922 births, the maternal mortality-rate in Victoria for the year 1925 was 4 3 per 1000 live births The decrease in deaths from all puerperal causes since 1905 is 23 per cent, and in the death-rate from sepsis of 38 per cent, though sepsis is still responsible for slightly more than one-third of all puerperal deaths Notification, to be of any use, must be carried out with knowledge and intelligence In Victoria it is so little understood that more than once in the years 1921–25 the deaths from puerperal fever exceeded the total notifications. Dr Allan sees great danger in this tendency to "shelter behind a fictitiously low mortality-rate," and says that "the first result of an awakened professional conscience will be an increase in the number of deaths reg stered, and a rise in the statistical rate due entirely to more accurate certification of the cause of death" He points out that statistics on a small scale may lead to erroneous conceptions, and that Victoria's task is not to compare her situation with standards of other countries, but rather to face the fact that she is losing 150 mothers a year from causes connected with childbirth, a loss which cannot be afforded, and to determine that dissatisfaction shall be the prelude to such cooperation between the public and the medical profession as will lead to prevention.

Obstetric nurses in Victoria are not controlled by the General Nurses' Registration Board, but by a separate Midwives' Board composed of five public service members, "none of whom are in touch with current obstetric problems" The Board of Examiners, however, consists of three doctors and a nurse, all in active practice, and Dr Allan speaks appreciatively of the way in which examinations are conducted, though he considers that the written and oral tests should be supplemented by a practical examination at the bedside There are at present 2646 registered midwives, of whom half are trained, the other half being permitted to "practice" on the basis of previous experience Difficulty is experienced in persuading the well-trained woman to take up obstetric practice, largely owing to the influence of untrained nurses who are prepared to combine domestic duties with their nursing care About 60 per cent of all confinements in Victoria take place in either public or private hospitals Hitherto private hospitals have been allowed to register as training schools, but, on the advice of the Board of Examiners, the Midwives' Board has refused to register any more Good obstetric work is carried out at the Women's Hospital, Melbourne, The Queen Victoria Hospital, and at the St George's and Bethesda "intermediate" hospitals, the two latter having had one death among 400 patients and two deaths among 1317 patients respectively

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[1] Arch Path Lab Med, 1927, iii, 739

[2] Jour Path Bact, 1925, xxviii, 132

Dr Allan deals sympathetically with the difficulties which face the conscientious obstetric practitioner in the suburbs of Melbourne, and which differ in degree but not in kind from those met with in this country Patients and their relatives, often backed up by ignorant nurses, clamour for anæsthesia and quick delivery, hospital accommodation is poor and the nurses are untrained, while the desire to take the maximum number of cases is a temptation to hurry delivery Dr Allan had personal interviews with 230 practitioners, and he pays a high tribute to many "faithful disciples of the obstetric art" in the smaller townships, who manage to maintain a high standard of efficiency under discouraging circumstances He recommends the establishment of large modern maternity units with accommodation at reasonable rates Among some practitioners a tendency was noted to resort too easily to operation for contracted pelvis, and to make too frequent vaginal examinations Out of 132 cases of Cæsarean section the majority were performed for contracted pelvis, placenta prævia, and toxæmia, and the mortality following this method of treating eclampsia and placenta prævia did not compare favourably with that following more conservative methods There is still hard work to be done in educating the public, and providing conditions in which practitioners can do their best work, but Dr Allan is convinced that the majority at least are on the right road

NATURAL HEALING IN PULMONARY TUBERCULOSIS.

ALL through the nineteenth century pathologists exercised their minds with the question What are the true characteristics of the histological lesion of the tubercle, especially as it affects the lung? Even the discovery of the bacillus did not finally settle the question, though it narrowed it down to limits within which reasonable discussion could take place and emphasised the ætiological unity of all the lesions of pulmonary tuberculosis The names of those who have entered upon this, now classical, discussion are legion In a recent monograph, Dr Marc Jaquerod[1] has essayed to carry the subject a stage further by defining the natural processes of healing which occur in pulmonary tuberculosis He starts out from the standpoint of Letulle and Bezançon that the two essential lesions of the disease are (1) an "inflammatory nodule of the connective tissue constituted by a coalescence of a variable number of primitive giant-celled follicles," and (2) a "bacillary broncho-alveolitis"—which correspond respectively with the productive and exudative lesions of the German pathologists, but he considers that the three well-recognised morbid anatomical results of inflammation described by pathologists—viz, caseous degeneration, fibrous transformation, and calcification—are not all There may be a fourth process, resolution, which escapes the eye of those who make post-mortem examinations In proof of this the author quotes the example of a fresh laparotomy, performed years after a previous one, when the tubercles seen on the first occasion were found to have disappeared without a cicatrised vestige of the disease "But mention these facts," he adds, "to a pathologist, who is not also a clinician, and he will deny them Why? Because he has not seen them" Dr Jaquerod believes that the reabsorption of bacilli and inflammatory products, *probably* by a humoral process rather than a phagocytic one, is possible Bacteriolysis indeed, may promote resolution whilst phagocytosis may produce metastases by transporting bacilli to a distant part of the body, a point strongly emphasised also by Calmette In other words, given adequate rest and time for the humoral process to act, a lesion may clear up little by little and end by being completely cured The monograph contains many beautiful radiograms illustrating clinical points in the argument, with chest diagrams of physical signs accompanying them—a wholly commendable method of demonstration—but the pathological evidence for the thesis of complete resolution of the lesions of pulmonary tuberculosis is entirely lacking The pathologist is in fact warned off the field of discussion early in the book by the time-honoured test of agnosticism that those who cannot see will not believe By analogy with other diseases of an infective nature, resolution in tuberculosis is obviously not impossible; but without adhering to the old adage "once tuberculous, always tuberculous" we believe pathological proof of resolution should be forthcoming if it is really a fact The evidence of the radiogram cannot be taken as final

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[1] The Natural Processes of Healing in Pulmonary Tuberculosis By Marc Jaquerod, M D, Physician in Charge Grand Hotel Sanatorium Leysin London Baillière, Tindall, and Cox 1926 Pp 108 6s.

The Services.

Surgeon Rear-Admiral Arthur Gaskell, C B, O B E., takes up the post of Director-General of the Medical Department of the Navy, in succession to Surgeon Vice-Admiral Sir Joseph Chambers, K C B, C M G, on July 1st

ROYAL NAVAL MEDICAL SERVICE

Surg Rear Admiral J F Hall is placed on the Retd List at his own request

Surg Lt (D) C Williams to *Vivid*, for R N Barracks, Devonport, for duty at St Budeaux

ROYAL NAVAL VOLUNTEER RESERVE

Surg Sub-Lt H M Willoughby to be Surg Lt

WAR OFFICE

Col J P Helliwell, late the A D Corps, from Inspr of Dental Servs, to be Asst Dir-Gen (for the Dental Servs)

ROYAL ARMY MEDICAL CORPS

Capt W Bruce to be Maj
Capt C F Anthonisz to be Maj (Prov)
E M Wright to be Temp Lt

ROYAL AIR FORCE

Flight Lt C G J Nicolls is granted a permanent commission in this rank

Flying Officer P D Barling is promoted to the rank of Flight Lt

DEATHS IN THE SERVICES

Surgeon-General Henry Cook, I.M S (retired), died at Lee-on-Solent in his ninety-sixth year on May 30th. He studied medicine at St George's and St Mary's Hospitals and qualified with the M R C S Eng. in 1854 After joining the Indian Medical Service, he served with the Persian Expedition of 1857, and with the Abyssinian Expedition of 1867-68, receiving medals on both occasions He had been principal and professor of medicine and hygiene at Grant Medical College, Bombay, and Dean of the Faculty of Medicine at Bombay University Surgeon-General Cook was a Fellow of the Royal College of Physicians of London, of the Royal Geographical Society, of the Royal Microscopical Society, and of the Geological Society, and a justice of the peace for Gloucestershire

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DOCTORS AND SICKNESS BENEFIT —At the annual congress of the National Deposit Friendly Society on *May 28th* Mr F Acton, the President, drew attention to the fact that in panel practice a medical man who refuses to grant a sickness certificate is liable to lose his patient. Some measure ought to be devised by the Ministry of Health, he said, which would qualify or check the right of the patient to go to another doctor

IMPORTATION OF DRUGS —The Board of Trade intends to exempt uncompounded drugs from the requirement that imported goods bearing a British name or *trade mark* must also bear an indication of origin *This* exemption will not extend to proprietary articles, or to articles sold in their original packing Communications on the subject should be addressed before June 7th to the Secretary, Board of Trade, Great George street, Westminster, S W 1

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CCXXVI

CHRONIC GONORRHŒA IN WOMEN

Chronic gonorrhœa in women is one of the most difficult diseases to cure completely, The patient may have had a discharge for some years which she has neglected, through ignorance of its significance, or she may have had an attack of acute gonorrhœa and abandoned treatment too early In any case, the practitioner usually has the condition brought to his notice through some other illness, which when traced to its origin, reveals an old gonococcal infection as the primary source The superimposed illness may be an arthritis of one or more joints, the joints most frequently affected being elbow, wrist, finger-joints, knee and ankle. When other possible foci of infection, oral or intestinal, have been excluded, a patient may be found to have a discharge which, she says, is of long-standing, and causes her no trouble Again, the patient's symptoms may be purely pelvic, she may complain of menorrhagia, of pain in one or both iliac fossæ, or of sacral backache, but will stoutly deny that she has a discharge. The persistent practitioner will frequently find evidence of old-standing infection on pelvic examination, and such an examination should become recognised as an essential part of a general overhaul Sometimes also after patient investigation a suggestive previous history is obtained—an attack of severe cystitis some time before, or a baby with ophthalmia neonatorum There may be a history of pyrexia after an easy childbirth, followed by a considerable period of pelvic illness with menorrhagia, and even sometimes metrorrhagia, finally there remains a vaginal discharge, mostly slight, which causes little inconvenience. In many cases, on examination, old patches of staining will be seen round urethral or Bartholin orifices, and by massage of the anterior vaginal wall gleet or muco-pus can be expressed from the urethra Vaginal examination will almost certainly reveal a chronic cervicitis, with an erosion and muco-purulent exudate, and often thickening of the Fallopian tubes The discharge will contain mainly secondary organisms Gonococci are rarely found in such cases unless from a urethral film The gonococcus is, of course, intracellular at this stage, within polymorph or epithelial cells, therefore douching or painting alone cannot eradicate the disease The complement-deviation test for gonorrhœa is of doubtful value in the chronic stage, while cultures mostly grow only staphylococci

The practitioner may know well that the disease is a chronic gonorrhœa, but he should be chary of making his diagnosis known to the patient or her husband unless the previous attack of gonorrhœa is admitted or the gonococcus has been definitely isolated. The diagnosis may well be left at "chronic urethritis or cervicitis," but the importance of the lesion and of the discharge as a focus of infection must be stressed Many puerperal septicæmias are undoubtedly due to a chronic gonorrhœa

Local Measures.

Treatment must consist primarily in keeping the patient clean and comfortable, by clearing away obvious discharge by careful douching, at the same time taking care to avoid over-douching The douche material used depends on the type of discharge and on the practitioner's own preference

Patients left to themselves frequently choose lysol douches and these, if not thoroughly mixed, or if used too strong, seem to make her more sore and less confortable than before My preference in very purulent cases is for a douche of 1 per cent lactic acid, or of sanitas, or of liq sodæ chlorinatæ 1 in 80, or weak pot permang In less purulent cases a plain douche of hypertonic saline, or of boracic, or of zinc-alum powder in equal parts, ℈1 of powder to each pint of douche water, is useful and comfortable Bladder and urethral washouts must, of course, be done with bland, non-irritating drugs I use 1 in 8000 permanganate solution or boracic ℈ 1 to pint, or 1 in 6000 biniodide of mercury, taking care that none of the biniodide solution remains in the bladder

The accepted drug for application to the cervix in gonorrhœa has for long been one of the preparations of silver. but though these salts have a wide field of usefulness, I do not use them exclusively Saturated solution of pot permang, 20 per cent mercurochrome, and 1 in 100 acriflavine are among other useful drugs An important point to remember when painting the cervix is that any adherent mucopus must be dissolved with liq potassæ, or better still, with a saturated solution of sodii bicarb before the antiseptic paint is applied In painting erosions of cervix, a solution of picric acid is sometimes useful, or 10 or 15 per cent picric in alcohol may be employed No useful purpose is served, however, by undue use of caustic substances in painting the cervix Soluble pessaries of contramine, lactic acid, or of ordinary sulphur or of protargol are sometimes placed against the cervix, and kept in position by a dry tampon which is removed 12 hours later, or tampons soaked in one of the glycerine preparations may be preferred—e g, glyc boracis, glyc ac tannic, or glyc with 5 per cent ichthyol and 2 per cent lactic acid This last is a most useful tampon, though in some patients if it is continued for more than a few days an irritant vaginitis results Small lesions such as Nabothian cysts on the cervix must be punctured, Skene's ducts and ducts of glands of Bartholin, if infected, must be washed out with an antiseptic solution twice or three times a week

This treatment is only satisfactory when carried out by a well-trained gynæcological nurse, or by the doctor himself Self-douching by the patient is useless; a good nurse will accomplish in three weeks what it will take the patient three months to achieve

In addition to local applications measures directed towards raising the patient's resistance are required if the disease is to be eradicated

Vaccines

Vaccines have had periods of disrepute To get a really good result from their administration, it is necessary to have a vaccine freshly made from organisms of a vigorous strain The vaccine may either be autogenous or stock If a stock vaccine is used it must come fresh from a reliable source otherwise both practitioner and patient will be disappointed with the result

The best vaccine for a chronic gonorrhœa contains gonococci and secondary organisms combined, the usual mixed vaccine consisting of gonococci, staphylococci, streptococci, and diphtheroid bacilli The first dose for a woman in average health should be from 25–40 millions, depending on her body weight After a week, if the patient has not had a reaction the dose may be doubled A reaction is indicated by rise of temperature and pulse-rate from 6–24 hours after the injection, by headache sickness, or backache, or by a general feeling of malaise Should there have been a slight reaction only, an addition of 50 per cent to the previous dose may be given a week later When a really marked reaction occurs the dose should be repeated at the next injection, instead of being increased The injections are best given at intervals of a week to begin with, and later at intervals of 10–14 days Too frequent doses seem to induce a negative phase and to retard recovery

After eight to ten doses of vaccine, even if the patient has improved, there should be a rest of a couple of months; then another series of vaccines or another method of accessory treatment may be begun

Non-specific Protein Therapy

"Non-specific protein therapy" has many advocates at the present time, and has proved of great use It is simple and inexpensive, a drawback is the considerable reaction—local or general—so that the patient has to be prepared to lie up, or at least "go slow," for 24 hours after an injection

For housewife or business woman alike, an injection on a Saturday afternoon is convenient, the patient arranging to be in bed not later than four or five hours afterwards The reaction usually begins with rise of temperature and pulse-rate, the maximum rise—which may be 102° F—occurring 8–12 hours after injection During this period, naturally, the patient feels far from well, and usually aches all over Some patients experience no general reaction, but complain of very severe pain and stiffness at the site of injection The injections should be intramuscular, the gluteal muscles being generally chosen in women. It is best for the patient to have no other drug, but should the reaction be too severe, 10 gr of aspirin will make her comfortable

Before starting protein injections it is wise to make sure that the patient is not subject to asthma or hay-fever Such patients tend, a few seconds or minutes after injection to have a marked vasomotor reaction, with severe flushing of face and neck, suffusion of conjunctivæ, very rapid pulse and a feeling of suffocation, or as if the head would burst. Administration of hypodermic injection of 10 minims of adrenalin (1 in 1000) P.D & Co, usually clears this at once, but if it does not do so completely, the dose can be repeated in 10 minutes Such reactions are rare

There is usually an exacerbation of the discharge for 24 hours after the injection, followed by improvement. A marked leucocytosis while the reaction is at its height gradually subsides till, in a few days, the white count is practically normal. These injections may be repeated weekly, four are usually enough. The materials most frequently used are milk, a collosal silver preparation, or T.A.B or some similar vaccine Milk is prepared by standing it in a boiling water-jacket for 10–15 minutes A clean, boiled test-tube can be three-parts filled with milk, stopped with flamed cotton-wool in the usual way, and stood in a steriliser or small enamelled basin of water which is then brought to the boil and boiled for at least 10 minutes The doses of milk usually given are 4, 5, 8, and 10 c cm in successive weeks

Sometimes *B. coli* vaccine is given at the same time as the milk injection; or a dose of electrargol (collosal silver) may be given intravenously, followed immediately by a small hypodermic dose of mixed gonococcal vaccine Sometimes T.A.B is given weekly in doses of ½ to 1 c cm till three or four doses have been given The underlying idea of all these injections is the same

The Glycerine Drain

In a chronic gonococcal endometritis with discharge and menorrhagia, great relief is often obtained by using the glycerine drain

This simple method was introduced by Dr Remington Hobbs, and as usually practised consists in gentle dilatation the cervix to No 7 or 8 Hegar About 2 c.cm. of pure glycerine is then injected into the cavity of the uterus from a sterile 5 c.cm. syringe, a small rubber drainage-tube is inserted through the internal os and is left to drain into the vagina, which is lightly packed with iodoform gauze, the gauze is removed in 24 hours, the rubber drain 24 hours later In a multipara an anæsthetic may not be required, only a very short anæsthetic is required in any patient, and the patient is in no way upset by the manipulation

This method has usually to be repeated, in a chronic case two or three times, at intervals of three weeks or so Some gynæcologists prefer to pack the uterine cavity with 50 per cent glycerine and iodine, or with 5 per cent mercurochrome in glycerine

Diathermy.

Where there is a chronic urethritis of some duration, in my opinion there is no treatment so effective as diathermy, as suggested and practised by E. P. Cumberbatch and J. W. Arthur Robinson.

By means of a diathermy machine with special electrodes a temperature of 112° F in the patient's urethra can be reached and maintained for 10 to 15 minutes without causing pain, and most obstinate cases of urethritis have been completely cleared up Similarly, in cases of chronic cervicitis, a heat of 112 5° to 113° F can be safely borne by the cervix for 10 to 15 minutes, a cervical electrode, shaped like a uterine sound but containing a thermometer is used This penetrating heat is highly inhibitory to the gonococcus, and the patient has no discomfort, but rash applications of 115° to 120° F invariably produce pain, from pelvic congestion, which may persist for a couple of weeks This treatment gives admirable results in cases of gonococcal arthritis, the joints clearing up sometimes as if by magic. Before administering diathermy treatment the practitioner must have careful tuition, since inexpert handling will inevitably produce pain or even severe burns

One last word; if a married woman has a chronic gonorrhœa, time, patience, and money are thrown away on treating her if her husband has old untreated prostatitis or vesiculitis

MARGARET RORKE, M B, Ch B Glasg,
Medical Officer in Charge of the Female V D Department,
Royal Free Hospital.

GENERAL MEDICAL COUNCIL.

SUMMER SESSION, 1927

TUESDAY MAY 24TH

PENAL CASES

In accordance with the usual custom the penal cases were heard in public, the Council deliberated on them in camera and the results were then announced

The Registrar read the report of the Dental Board in regard to Joseph Halliday Magee, registered on Dec 7th 1922 as of 53, St. Mary's-terrace, Tyne Dock 'Dentist 1921'; charged with canvassing for patients on board certain ships On hearing the statement of Mr. Magee, the Council decided to remit his case to the Dental Board for further inquiry.

Another report from the Dental Board charged Samuel Theodore Hilton, registered on Nov 29th, 1922, as of 16 East-crescent, Manton, Worksop, 'Dentist 1921." with canvassing Mr Hilton did not appear The Council ordered that his name be erased from the Dentists' Register

The Case of Samuel Grahame Connor registered as of 119, Oxford-street, London, W. 1, M.B, C.M. 1889. U Edin Dr Connor had been charged before the Council at its Summer Session, 1926, with having been convicted at Marlborough-street police-court on three summonses for an offence against the Dangerous Drugs Act and the Council had postponed judgment for one year, directing him to produce evidence of his good professional behaviour during the interval[1] On considering several testimonials and hearing the assurance of Dr Connor that he would take care never to lay himself open to such charges again, the Council did not see fit to erase his name from the Register.

The Case of Austin Heron registered as of the West African Medical Staff L. L.M. 1924, R.C.P. Irel., L., L M 1924, R C S Irel. Dr. Heron had been charged before the Council on May 29th 1925, with having been convicted for obscenely exposing his person to certain females, and judgment had been postponed for a year. In 1926, Dr Heron being absent on service judgment had been postponed for a further year. On considering his testimonials and his personal assurance of his intention to maintain good professional behaviour the Council decided not to erase his name from the Register.

The Case of Jogesh Chandra Bose, registered as of 276 Cherrywood-road, Birmingham, M.R C.S, L R.C.P. 1923 The charge against this practitioner was as follows:—

That, being a registered medical practitioner, you on Feb 1st, 1927, signed and issued the following certificate, viz. —

> This is to certify that William Hopkins, residing at 5/149, Fazeley-street, is suffering from bronchitis and is not able to attend school.
> 1.2 27 J C BOSE, M R C.S;

whereas the said William Hopkins had not been under your medical care, nor had you seen or examined him on Feb 1st, 1927, or at all, which certificate was untrue, misleading, or improper; and that in relation thereto you have been guilty of infamous conduct in a professional respect

The complainants the City of Birmingham Education Committee, were represented by Mr. Digby Seymour solicitor. The respondent was represented by Mr. Oswald Hempson, solicitor

Mr John Stevenson, chief superintendent of the Birmingham School Attendance Officers, speaking to his statutory declaration stated that respondent had admitted in his presence having written the certificate in answer to a request from the mother, Florence Hopkins, transmitted through her small daughter on Feb 1st Respondent had written a letter on Feb 27th to Dr. Innes the chief medical officer of schools, in which he had admitted not having examined the boy and expressed regret On Feb 7th the Education Committee had received a letter from Mrs Hopkins explaining that she had not asked Dr Bose to examine the boy because she had not had the money, but had thought it would be unnecessary because the doctor had been visiting every week, and knew her complaint (the message had been "Mother has 'flu and thinks Willy has got it too")

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[1] THE LANCET, 1926, i, 1147

Mr Thomas Alan Jinks, divisional superintendent of the Birmingham School Attendance Officers, corroborated The documents were put before the Council

Mrs *Florence May Hopkins, mother of the boy* William, stated to her statutory declaration that the boy had not been attended by any doctor He had been absent from school for a week from Jan 30th On Feb 1st she had sent her daughter Vera to tell Dr Bose that she (witness) had influenza, and that she wanted a second note for William Dr Bose had sent her a prescription, and a certificate stating that William was suffering from bronchitis She had sent the certificate to his school, and paid Dr Bose 6*d* for it She had really wanted her son to stay at home and look after the children On Feb 5th, witness stated, Dr Bose had visited her and said that there had been trouble about the certificate, and had offered her 5*s* to say nothing about it She had refused to take this, but he had put it on the dresser On the 12th Dr Bose had come again, saying that he was going up to see the school medical officer, and asking her if she had heard any more about the matter On the 19th he had brought her a £1 note and asked her again if she had heard any more, he had given her another 5*s* on leaving He had promised her £50 to say nothing On the 25th she had written to him asking for a loan of £2 and on the 26th he had come to the door and handed her two 10*s* notes Cross-examined, however, she admitted that she had received two letters from Mr Bose's solicitors, denying any liability and threatening action if she asked him for any more money, and made any further derogatory statements about him She admitted having written to Mr Bose charging him with indecent intent in asking her on one occasion to speak to him upstairs, although relatives had been present on that occasion She admitted having said nothing about these matters in her statutory declaration

Richard George Hopkins, nephew of Florence Hopkins, corroborated her evidence regarding the gifts of money Under cross-examination he fainted, and no further questions were asked

William Hopkins also gave evidence corroborating his mother's

Mr Bose, giving evidence in his own defence, admitted having written the certificate without examining the boy William, but stated the he had seen him three days before, and that he had then had a cold and a cough He expressed his regret, and an undertaking that he would be more careful in future He denied ever having given Mrs Hopkins any money to keep silent, but stated that she had attempted to blackmail him, by threatening to inform the medical officer of schools She had written him two letters, which he had referred to his solicitors, who had replied suitably. Her charges against him of bribery and of making an indecent suggestion had been brought to protect herself from the accusation of blackmail

Mr Bose's adviser put in several letters testifying to the respondent's excellent character and conduct

The President announcing the decision of the Council, said that it had been proved to their satisfaction that the certificate in question had been given in a lax and careless manner, and was in fact untrue, misleading, or improper The Council regarded laxity in the giving of certificates as a grave matter, likely to result in injurious consequences to patients and others, and worthy of severe censure In order, however to give respondent time to reconsider his position in this regard, they had decided to postpone judgment until the November session of this year. Respondent would be required before that date to supply the names of two or three professional brethren who would be prepared to testify to his character and conduct in the interval

WEDNESDAY, MAY 25TH

The Case of Frederick Joseph William Porter, D S O registered as of the Army Medical Service, L S A Lond, 1889, M R C S Eng, L R C P Lond, 1890 The charge against this respondent was that he had sought to obtain patients, and promote his own professional advantage, by means of notices inserted in the Indian press The notices read —

1 In the *Times of India* of Feb 5th, 1926 "Major F J W Porter, R A M C, D S O, has now returned to India from England after an absence of a year, and will shortly resume his practice at Karachi" 2 In the *Kaisar-i Hind*, Bombay, of Feb 7th, 1926 "Major F J W Porter, R A M C, D S O, has now returned to India after a year's absence in England and will shortly take up the practice in Karachi"—(*translation*) 3 In the *Daily Gazette* of Feb 8th, 1926 "Major F J W Porter, D S O, R A M C, has now returned to India from England after an absence of a year, and is putting up at the Carlton Hotel, where he may be consulted" 4 In the *Sind Observer*, Karachi, of Feb 8th, 1926 "Major F J W Porter, D S O, R A M C, who was formerly in Bombay, has now returned to India after an absence of a year and is putting up at the Carlton Hotel in this city, where he may be consulted" 5 In the *Parsi Sansar*, Karachi, of Feb 10th, 1926 "Well-known surgeon in Karachi Major Porter, the well-known surgeon of Bombay, has returned to India after a year's absence in England, and is staying at the Carlton Hotel, where he may be consulted"—(*translation*) 6 In the *Sindvasi*, of Hyderabad, Sind, of Feb 17th, 1926 "Major Porter in Karachi The people of the *Times of India*, Bombay, write that Major Porter, D S O and R A M C, retired, has come back to India after an absence of one year, and stays in the Carlton Hotel, Karachi, where he can be consulted"—(*translation*)

The complainants who did not appear, were Lieut -Colonel Ivor Davenport Jones, I M S, M B, Major Charles Newton-Davis, *M C*, I M S, M R C S, and Dr Guy Theodore Wrench

The respondent was accompanied by Mr Oswald Hempson, solicitor In answer to the charges, he stated that until April, 1923, he had practised in Bombay, and that he had then retired to England, but had been compelled to return to Bombay and start practice afresh In 1924 he had again tried to retire, but had had to go back a second time in 1926. In 1923, when he had arrived in Bombay, he had consulted the Registrar of the Bombay Medical Council, giving him the form of the proposed announcement, and had been told that he might insert it at least twice. The form stated that he had arrived and was staying at a certain address When he returned in 1926 he had been advised to go and practise in Karachi Since he knew one of the directors of the *Times of India*, he had asked him to put in announcement (1), and his friend had done so He had not seen the necessity for consulting the Registrar again, as this was practically the same announcement that he had had inserted in 1923 It had appeared in the social and personal columns, items in which were never paid for At his request, the *Times of India* had sent the announcement to the Parsee journal, *Kaisar-i-Hind* He had gone personally to the editors of the other papers and given them copies of announcement (1) He had inserted the phrase, "where he may now be consulted," in order to avoid being mistaken for a "globe-trotter" He had not instructed them to vary the notice, and had not seen the translations until they had appeared, when he had been disgusted He had obtained a statement from the editor of the Parsee journal that the announcement had not been given him in the words that were printed The complainant, Dr Wrench, had, because of these announcements, refused to make his acquaintance, and had made defamatory statements about him to other people In April, 1926, respondent had commenced an action against Dr Wrench in the local police-court, since the Bombay registrar had informed him that his conduct was covered by

Rule 23. This was a criminal action but civil process took an impracticably long time. The magistrate had dismissed his summons Cross-examined, he *admitted that he had known that the Indian Penal* Code provided a penalty of two years' imprisonment for defamation of character, also that he had failed in a similar action several years before.

The Council found the facts alleged against the respondent to have been proved, but postponed judgment, subject to the usual provisions, until the May session of 1928.

The Case of John Morrison Lever registered as of 6 Savile-road, Chapeltown Leeds L M.S S.A Lond, 1917, M B, Ch.B, 1917, Univ Leeds This practitioner was charged with knowingly enabling by his countenance or assistance, women not certified under *the Midwives Act, 1902, to attend certain women in* childbirth, under cover or pretence that the patients were attended, or to be attended by the uncertified women under his direction and that in each case he signed a maternity benefit certificate, thereby enabling the uncertified women, in contravention of the said Act, to practise as if they were certified thereunder. The complainants, the London County Council were represented by Mr Pawlyn, assistant solicitor to the L C C Dr Lever was accompanied by Mr. Charles Davis, of Messrs Bulcraig and Davis, solicitors

Mr. Pawlyn stated that, with *one exception*, the women concerned had refused either to make a sworn declaration or to attend before the Council to give evidence Mr. Davis objected to the sworn declaration of Albert Garner, an inspector of the Public Health Department of the L C C, on the ground that it contained hearsay evidence, and the Council, advised by its legal assessor, decided to admit only such parts of this declaration as the witness could testify to from his *own* knowledge.

Mr Garner, in evidence, stated that during the early part of 1926 he had been engaged in making inquiries into the practices of the unregistered women mentioned in the charge. He had been present at the proceedings against one of them, Mrs Ketley, before a magistrate, when she had been bound over for a year He had seen all the women *concerned* in the present charge but had failed to induce any of them, except one of the mothers to make a declaration He identified the maternity benefit certificates signed by respondent in favour of the mothers in the case He had not asked Dr. Lever to appear at the proceedings against Ketley, nor told him that they were being instituted

Mr Pawlyn put into court the declaration of Mrs Rose Baldwin, in which the deponent *had stated that* she had engaged Mrs Ketley to attend her in her confinement for 15s. She had informed Dr Lever of this The birth *had taken* place at 2 30 A.M., and respondent had examined her on the following day, but had not been present at the actual birth He had attended her for some time afterwards, and had signed the maternity benefit.

Dr Lever's adviser submitted that there was no case for the respondent to answer and placed him in the witness-box to explain the circumstances

Dr. Lever stated that Mrs Baldwin's husband had called on him one morning saying that his wife had been confined during the night, and that the local doctor she had engaged had *refused to attend* her Respondent had attended her for the remainder of the time that she had been in bed He had visited her as soon as he could after her husband had called him in He had made no arrangement of any sort or kind with Mrs Ketley He produced his day-book in evidence of the fact that he had been engaged by all the other women before their *confinements* and had actually visited them before and after the births Cross-examined, he denied any cooperation of any kind with the uncertified women in his district The mothers used to engage them months ahead and the fees of the certified women, none of whom lived very near, were beyond their means

On a motion of Mr H L Eason, seconded by Sir Robert Bolam, the Council resolved to deliberate on the case without hearing any further evidence As a result of their deliberation they decided that the *charge had not been proved, and dismissed the case*

FRIDAY, MAY 27TH

The Cases of Lawrence Crombie registered as of Dunollie, Dalmuir, Glasgow, M B, Ch.B, 1913, Glasg.; of *Eliazer Gelfer*, registered as of 45, Abbotsford-place, Glasgow, C 5 L R C.P, L R.C S L.R F.P S., 1923, and of *William Mason Hamilton* registered as of Law Junction, Lanarkshire, M.B, Ch.B, 1921, Glas.

These practitioners had been summoned to appear before the Council on the charge of employing under cover of their own *qualifications*, assistants who were left in charge of premises where scheduled poisons were sold to the public, but who were not legally qualified to sell scheduled poisons

The complainants were the Pharmaceutical Society of Great Britain. Mr. O. Hempson accompanied Drs Crombie and Hamilton Dr Gelfer was not present but sent his defence in writing

Dr Gelfer, in his letter, stated that the poison which his assistant had sold was a 4-oz. bottle of lysol, sealed and labelled as poison with instructions for use He had never heard that any qualification was needed for its sale He had stopped the sale of lysol three months ago, when the inspector, who had been the first to ask for a bottle, pointed out his misdemeanour The lysol had been for his own and his wife s use. He did not employ his assistant to sell scheduled poisons, and all except the lysol were kept locked up

Dr Crombie stated in evidence that his assistant had sold some Jeyes' fluid without his knowledge She had been told she must not sell poisons He had a qualified chemist to run his dispensary He had now removed his poisonous disinfectants Cross-examined, he said that the Jeyes' fluid had got loose into the cupboard from his surgery by accident. He did not know how it had been sold without label or name He had not heard that the police had had great difficulty in tracing it in poison cases In answer to a question by the President he admitted having heard of the regulations since this complaint had been brought against him. Although this *particular Jeyes' fluid* had been there for his own use, he had some for sale as well.

Mr. T Armstrong, M.P S, Dr Crombie's dispenser, stated that the assistant knew what she could sell and what she could not He had removed all dangerous poisons from her care as soon as he had taken over the dispensary Cross-examined, he stated that he did not understand that Jeyes' fluid was a dangerous poison. He had given the assistant no special directions about Jeyes' fluid or lysol The inspector had asked for lysol, and the assistant, not having any, had recommended Jeyes' fluid, which she had sold in an unlabelled bottle It was left to her to do the labelling

In reply to a question by the President witness stated that he was responsible for the conduct of the *dispensary*; he went there several times a week, but it was kept open without him The assistant who was employed by the respondent was in charge when neither of them were there

Dr Hamilton stated in his defence that his assistant's only duties were to open and close the surgery, and to sell a few tooth-brushes and tubes of paste The whole stock was only worth 2½ guineas She had a list of things she was allowed to sell and had been warned not to touch poisons of any sort. What lysol he had was for his own use, and not for sale and was therefore unlabelled. He did his own dispensing The assistant would get half the profits from her sales

Mr. Hempson pointed out, for the defence, that although ignorance of the law was no excuse, there was a ready sale of Jeyes' fluid and lysol, *which many* people did not know were scheduled poisons He produced a bottle of Jeyes fluid which he had bought *that day* On the President pointing out that there were two grades of this fluid, he could not answer for which his specimen might be

The Council found the facts alleged against the respondents proved to their satisfaction The practice of allowing unqualified assistants to sell these disinfectants, said the President, was fraught with danger to the public and not creditable to the medical profession He quoted from the Council's Warning Notice Having regard, however, to the regrets expressed by the respondents and their pledges to amend their precautions against this abuse, the Council would postpone judgment for six months, subject to the usual provisos

The Case of Duncan Miller, registered as of Glebe House, Washington, Co Durham M B, Ch B, 1911, Aberd The charge was that of having been convicted of being drunk whilst in charge of a motor-car, and on another occasion of having been found drunk on the highway Respondent stated that since he had had malaria he had been very susceptible to alcohol Since the last conviction, in December, 1926, he had been a complete abstainer The Council decided to suspend judgment until May, 1928, but warned him that any conviction in the interval might cause his name to be erased at once

Public Health Services.

DIAGNOSIS OF SMALL-POX IN LONDON
“MISSED” CASES

THE London County Council has issued a reminder to all practitioners within its area that in recent years outbreaks of small-pox have occurred through the agency of “missed” cases In view of the importance, therefore, of securing the early recognition and diagnosis of small-pox, the Council draws attention to the desirability of conferring at once with the medical officer of health *of the borough concerned* in all doubtful cases and also of ensuring that no case is removed to hospital without first consulting the medical officer If difficulty should arise in securing immediate touch with the M O H the services of Dr W McConnel Wanklyn will be available at any time of the day or night and during week-ends, on application to the Public Health Department, County Hall, Westminster Bridge, S E 1 (Telephone Hop 5000)

SPECIAL SCHOOLS

THE Board of Education's list[1] of special schools and institutions for defective children is interesting as showing what progress has been made The amount of this progress varies greatly in different parts of the country In some areas the authorities have no establishments of their own and make use to some extent of those belonging to their neighbours—an arrangement that has many disadvantages The grouping under counties, moreover, does not give an accurate picture of the true state of affairs, for example, some of the special schools in Kent belong to outside authorities such as the London County Council, whilst others are maintained by borough and urban district councils and not by the county authority Similarly, the Soss Moss School for Epileptics is given under Cheshire, though a footnote explains that it is maintained by the Manchester Education Authority

Speaking generally there is nearly enough accommodation for the totally blind and deaf, but great benefit would result from earlier admission, for all experts agree that deaf children ought to begin their training much earlier if they are to acquire good speech There is a great lack of accommodation for the mentally defective children, less than a half of them are dealt with, and a large proportion of the places provided for them are concentrated in a few places like London, Manchester, Liverpool and Birmingham, whilst whole counties like Cumberland and Cornwall have no special schools for these children within their borders Even where there are some day special schools the problem cannot be considered as completely solved The most troublesome feature of many of these children is instability, and where this character is strongly marked residential school-care is necessary Apart from residential schools, those offering the best promise for the future are the ones which give manual work and elementary industrial training to the elder mentally defective pupils It is sometimes suggested that it is an economic advantage to let these children go into industry at the age of 14 because employers will then be more ready to accept them But the very reason which makes employers accept children at this age causes them to get rid of the same children when they are 16, and they are then thrown upon the world unemployed and untrained The additional two years of manual and moral training makes a difference to their future both as regards the capacity for permanent employment and the control of antisocial tendencies

Much more provision, too, is needed for the physically defective, and in these cases it is more obvious though probably no more true, that expenditure on salvage is the best economy Orthopædic schools and residential open-air schools in particular repay their cost, often changing a weakly child from a burden to the community into a valuable worker and citizen Accommodation is most of all seen to be lacking for epileptics Assuming that 0 6 per 1000 of the child population are affected, the number to be dealt with would be about 3000 but the figures given in the list (p 31) shows that the total provision is for 525 cases only Lastly, there is scarcely any mention of provision for those difficult cases of double defect Apparently the only establishments dealing with this problem are the school at Penn (Buckinghamshire), maintained by the L C C for the mentally defective and deaf, and the little Ellen Terry Home at Reigate for the blind and mentally defective, at which there are at present only five pupils

INSTITUTE OF HOSPITAL ALMONERS

A MEETING was held in support of this Institute on May 26th at the Grotrian Hall, Wigmore-street, Lady (ROSE) BRADFORD, the President of the Institute, being in the chair

Dr CHARLES GRAY, chairman of the Council, briefly surveyed the history of the movement, which was largely due to the inspired enthusiasm of the late Sir Charles Loch The first almoner was appointed at the Royal Free Hospital in 1895, and the Hospital Almoners Council was formed ten years later Originally it had been supposed that any woman with sympathy and brains could do the work, but it soon became obvious that special training in the science of charitable assistance must be undertaken if the community on the one hand, and the patients on the other, were to get the utmost advantage from the efforts of the almoner The course of study organised by the Institute was originally of three months' duration but had been extended from time to time, and now it covered 2 to 3 years Theoretical instruction at a school of economics combined with visits to charity organisation associations was followed by a term of practical work under the supervision of a trained almoner in a hospital The scope of the work done by the almoners had extended in recent years from out- to in-patients, and thence to the special departments and the maternity districts and a further enlargement of the sphere of their activities to include Poor-law infirmaries mental hospitals, tuberculosis dispensaries, and institutions for the feeble-minded was to be anticipated

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[1] Certified Special Schools Recognised Institutions for the Training of the Blind and other Defective Children and Nursery Schools in England and Wales List 42 1927 H M Stationery Office 1s

SIR **JOHN ROSE BRADFORD** spoke on the relation of almoners' work to medicine The advance of medicine in recent years was due not only to improved methods of technique and nursing, but also to the development of a system of after-care It was in this direction that almoners did so much useful ancillary work Treatment used to be confined to periods of illness, if not even actually to the acute stage of illness, but it was now recognised that many diseases were less formidable in the acute stage than they were later on, and intelligent observation was needed long after the hospital stage if the utmost benefit from treatment was to be secured The need for after-care had long been recognised for discharged mental cases and was now considered essential for many diseases affecting the body, such as acute rheumatism Sufferers from chronic diseases could often be maintained in fair health if supervised A trained almoner could afford great help in the investigation of disease, whereas an untrained one could not effectively cooperate in medical research

SIR **BERKELEY MOYNIHAN**, in corroborating Sir John Rose Bradford, said that he was glad to fulfil this function of a surgeon, who was often called in to demonstrate the accuracy of teaching and prediction made by a physician He added that something more than medical and surgical efforts were needed in hospital work, which was concerned not only with momentary restoration of health to individuals, but with the retention of efficiency in a unit of the industrial army In surgery the ultimate outcome was more important than the immediate result, and after-care was urgently needed The doctor might order rest, change, or apparatus which the patient could not possibly secure unaided, his instructions often seemed unintelligible and his suggestions impracticable until they had been interpreted by the almoner As to preventive work, patients sometimes presented themselves at hospital in such a debilitated condition that the almoner had to devise means to restore their vitality before treatment could be given The public ignorance of fundamental facts was still so great that it was hardly an exaggeration to say that a multitude of people either committed suicide or were murdered In order to fulfil her function as an ambassador of medicine on the domestic hearth an almoner must be a specially trained gentlewoman moved not by sterile pity but by active compassion She had to be the ambassador not only of the doctor, but of the community It was her business to be cognisant of all the agencies which might play a part in promoting the welfare of a patient and to see that he was in a position to take advantage of them There was at present much talk of the possible future administration of Poor-law hospitals by city councils The Government might with advantage give a lead in insisting on the appointment of almoners to such institutions and induce the public and the governing bodies of hospitals to realise that without trained almoners on the staff their work was not fully effective

SIR **ARTHUR STANLEY** spoke from the standpoint of a hospital treasurer It used to be thought that the chief value of an almoner was to prevent abuse of the hospital This was certainly one of her functions but gross attempts by the well-to-do to get hospital attention were nowadays rare After the war the financial condition of St Thomas's Hospital was at a low ebb The almoners explained the situation to the patients, with the result that the income derived from their contributions rose from £1400 to £14,000 Sir Arthur Stanley quoted a letter from Dr John Fairbairn referring to the value to medical students of the collaboration of the almoner

SIR **STCLAIR THOMSON** proposed a vote of thanks to the speakers and the President, and Lady Bradford replied

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Sir Alfred Rice-Oxley has been awarded the decoration of the Legion d'Honneur as an acknowledgment of the services which he rendered France as a member of the British League of Help

Correspondence.

"Audi alteram partem"

THE PURITY OF ANÆSTHETIC ETHER

To the Editor of THE LANCET

SIR,—Dr. S R Wilson's paper on "ether" convulsions in last week's issue is of importance not only because it demonstrates convincingly the cause of these convulsions, but because it draws attention to a much-neglected subject—namely, the purity of ether Probably the reason of this neglect is in the first place the lack of tuition in the clinical period, and in the second place an optimistic reliance by anæsthetists and hospital pharmacists on the distinctly florid descriptions attached by some manufacturers to their products Even Dr Wilson seems to have been hypnotised There is the less reason for this attitude, for Mr H Finnemore in 1914, at that time senior pharmacist to Guy's Hospital, read a paper on Anæsthetic Ether of Commerce before the British Pharmaceutical Conference,[1] and another on the same subject before the Section of Anæsthetics of the Royal Society of Medicine in 1915,[2] whilst Mr G. Middleton also discussed the subject fully in 1924 at the British Pharmaceutical Conference [3]

The method recommended by Finnemore for selecting a methylated ether has given complete satisfaction at Guy's The ether is chosen after a series of tests from samples supplied by the leading manufacturers, a contract is then placed for the year and the ether is delivered monthly and tested on delivery The tests used for peroxides are the alkaline potassium permanganate solution (suggested by Finnemore), the vanadic acid, and the cadmium potassium iodide tests, and for aldehydes the reaction with solid potassium hydroxide, which is allowed to remain in contact with the ether for at least six hours, although the B P only requires a time-limit of one hour The result of this constant care is that the manufacturers are kept up to the mark, and on only two, or at the outside three occasions, has the ether been returned for further purification But it is not intended to remain content, methylated ether can be made to reach a higher standard It is a question of the selection of the most stringent tests for peroxides which are also of easy application But here one must be careful, for as ether is an unstable body and has to be sent on long voyages, too high a standard must not be demanded of the B P

As regards decomposition of ether in my apparatus may I refer Dr Wilson to an article in your columns [4] describing this apparatus, in which I drew attention to the importance of testing the ether, before and after use, for peroxides and aldehydes, and stating that my practice was to use the ether twice, as the result of many tests had shown that a pure ether did not develop aldehydes and only occasionally peroxides after the first case But this article did not contemplate the recent modification which substitutes for the hand-bellows—an instrument which demands a small output of energy—the easy, effortless, continuous stream of oxygen I believe this method to have inherent dangers for, owing to hyperoxygenation, the signs of an overdose are easily masked Further, the tendency to decomposition is increased although, of course, no decomposition of a pure ether takes place in a reasonable time For example, I have on a recent afternoon used the same ether, vaporised by oxygen and exposed to a strong light for three consecutive major operations, a few ounces of fresh ether were added to the bottle before the last case, an amputation of the breast The ether was then tested and found to be free from peroxides and aldehydes Dr Wilson bubbled oxygen through ether for two hours in an artificial light and found that decomposition had been rapid and great, this ether, however, was impure to start with, and it is known that decomposition once started goes on rapidly under favourable conditions Of these conditions the most important is the presence of light, and I think Dr Wilson's suggestion of amber-tinted bottles for my apparatus is good, especially for hospitals The British Drug Houses, Ltd, kindly conducted for me in 1921 the experiment of bubbling oxygen through their highly purified ether for a considerable time—viz, four hours—but the apparatus was protected from light The vapour was condensed and collected in two fractions. Each of the fractions and the residue were found to be free from peroxides and aldehydes

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[1] Pharm Jour July 25th 1914

[2] Proc Roy Soc Med Anæsth March 1915, p 1

[3] Pharm Jour, July 26th, 1924

[4] THE LANCET, 1916, i, 70

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I am, Sir, yours faithfully,
May 28th, 1927 FRANCIS E SHIPWAY

THE EMPLOYMENT OF MARRIED WOMEN

The Editor of THE LANCET

SIR,—In your leading article of May 14th you refer to the action of the Durham County Council in dismissing the married women officers on its medical staff The following is a copy of the resolution passed by the Council to which your article refers —

> "That the County Council give three months' notice terminating the appointment of all married women officers on its medical staff whose husbands are in receipt of an adequate income, and that in future no married women be given appointments on the medical staff of the department whose husbands are in receipt of an adequate income"

As a result of the passing of this resolution I have been dismissed from my appointment as assistant maternity and child welfare officer to the Durham County Council I have since applied for a similar post under the Finsbury Borough Council and my application was returned immediately as "ineligible" I know there are several other boroughs which object to married medical women on their staff, and the Ministry of Health itself leads the way in refusing to employ married women I feel it will be difficult, if not impossible, to obtain other employment in the Public Health Service Apparently this service is not open as a career for medical women unless they are prepared to remain unmarried

The whole question of the employment of married women bristles with difficulties, mostly imaginary The objection of the Durham County Council to the husband being in possession of an adequate income seems a typical example of such a "difficulty" There seems to be a strong public opinion amongst the laity against the employment of married women The point of view of the medical profession is, of course, different It is obviously against the honour and interest of that profession that it should be entered by a number of women who intend to give up their work on marriage and merely regard medicine as an interlude until such an event occurs

This is a matter to be taken up primarily by medical women themselves It is clearly unjust that they should be allowed to take medical degrees and the D P H and later be shut out from a large sphere of practice such as the Public Health Service

I am, Sir, yours faithfully,
ELEANOR C E MCINTOSH, M B, B S., D P H
Bishop Auckland, May 29th, 1927

THE REGISTERED NURSES' BUREAU

To the Editor of THE LANCET

SIR,—As chairman of the honorary advisory committee of the Registered Nurses' Bureau, I have to-day received a letter from Messrs A Wander, Ltd, in which they state that they are making a contribution of £1000 towards its expenses "We are prepared," they say, "to guarantee the Bureau financially over a period of two years, by which time we are confident that the recognition, approval, and support of your own profession will have placed its help beyond question"

In connexion with this handsome donation, which will, I am sure, be deeply appreciated by the medical and nursing professions, may I make two observations? (1) Too few of my colleagues realise that the majority of the devoted women who nurse their patients are paying heavy weekly commissions on their all too meagre remuneration, and that, to private concerns which thus exploit them The Bureau eliminates that I cannot too strongly urge all my professional confreres to acquaint themselves with the work of the R N B and to cooperate in this endeavour to help in a real and practical way the nurses on whom they depend so much (2) The R N B. is occupied only with the work of the private State-registered nurse—and in London only for the moment It steers clear of, and touches upon no controversial subject, and has no political or factional bias or affiliation The recognition, approval, and support of the medical profession will ensure the success of its work, and I appeal, therefore, to all medical men to accord that support wholeheartedly

The registrar will gladly send full information to any medical man or to any member of the public. The address of the Bureau is 55, Chancery-lane, W C 2 Telephone. Holborn 6846

I am, Sir, yours faithfully,
W ARBUTHNOT LANE
Cavendish square, W, May 30th, 1927

IODINE

To the Editor of THE LANCET

SIR,—My attention has been drawn to the review in your issue of May 21st (p 1114) of my paper on the Use of Iodine in Various Deficiency Diseases. The publication has been widely quoted in the lay press from Australia to the United States, and has brought me many hundreds of letters from medical men and women and others The only instances of damning with faint praise have been your review and that in one other medical paper Perhaps it is natural that this should be so, and I only write because I do not accept two phrases in your criticism as fair comment

The first is "research workers may look somewhat askance at his 'some hundreds of cases' *without recorded controls*" (the italics are mine) My report deals mainly with common ailments of childhood—debility, backwardness, chronic bronchitis, nocturnal incontinence, worms, boils, and the like—and not with fancy diseases Such conditions are prevalent everywhere, and are certainly common in Cumberland For years before the use of iodine was started all recognised forms of treatment were employed in our school clinics for these conditions Since we began to use iodine so many of each class have been treated on the old lines, so many on iodine in one form or other The results have been compared; the record cards of both groups are available for reference at any time If this procedure does not provide "recorded controls" then I do not understand the meaning of "control" If, further, as is the case, my colleagues here—men of up to 12 years' experience of school medical work—have, as a result of their comparisons of the results of the two lines of treatment, unanimously discarded the old method in favour of iodine treatment in many conditions—e g, worms, incontinence, backwardness, chronic bronchitis, &c, that, I think, is good evidence

The second phrase I query is "his rather undiscriminating choice of references to the value of iodine in disorder of all kinds" Strongly believing, as I do, in the value of iodine therapy I endeavoured in this report, to collect so far as I could all possible references to the use of iodine for all sorts of conditions and to give the fullest information as to lines of treatment, and as to *alleged* beneficial results, not that I believe them all, but to lay a foundation on which others desiring to further investigate the matter might build, and nothing more.

The report is a reprint, and was written in the first place for a lay committee and the criticism of the first report by medical men which reached me was that I did not sufficiently outline the 'how, the why, and the wherefore" of the matter. In other words, I was asked to set out clearly the *possible* indications for the use of iodine and the exact methods Hence the matter contained in the reprint. Being anxious to avoid the risk of the somewhat obvious and superficial jibe that one was propounding a 'cure-all remedy, I was particularly careful in the wording of the report That this was recognised in some quarters may be demonstrated by a quotation from the editorial comment in the *Municipal Journal*:

Dr. Fraser is expert in the moderate statement of his case You apparently do not share this view

The value of the claims is open to test. I say quite definitely, for example that boils will readily yield to collosal iodine in appropriate doses that threadworms are quickly cured by iodised butterscotch, that the nocturnal incontinence of children will in all cases be much reduced and in nearly all cases cured by either of the above. These claims are straightforward and easily tested If they prove reliable many of the other claims are no more difficult of trial and I have no remotest doubt that a fair test will lead to a revision of the verdict "Not proven which no doubt arises not from any weakness in the case for iodine, but from my imperfect statement of it I am, Sir, yours faithfully

Carlisle May 24th 1927 KENNETH FRASER

MEDICAL LITERATURE FOR KENYA COLONY

To the Editor of THE LANCET

SIR,—May I ask your help in making known a need of one of our latest outposts of Empire?

The Hon Lady Grigg, wife of the Governor of Kenya, finding a serious deficiency of nursing aid for both white settlers and natives in the colony, has established a nursing institute which is already doing excellent work but requires further support Among other appliances for which there is pressing need are medical books and a supply of these would be gratefully welcomed not only by the nurses but by the doctors working amongst this rapidly growing population Lady Grigg has asked the Victoria League which has already sent out works of general literature, whether it could supplement these by a gift of books dealing with nursing medicine, and surgery If any of your readers should have works on these subjects which they no longer require and which are in good condition and fairly up to date, they would be rendering valuable help if they would send them addressed to me, Dowager Countess of Jersey, President Victoria League 81, Cromwell-road S W 7 I would thankfully acknowledge any such gifts I am, Sir, yours faithfully,

M E JERSEY

Victoria League House 81 Cromwell road, S W 7
May 30th 1927

CHILL DURING ULTRA-VIOLET TREATMENT

To the Editor of THE LANCET.

SIR,—I should like to draw the attention of ultra-violet radiologists to a manner in which I think their ministrations to sufferers from neuritis and kindred ailments are handicapped. With considerable experience of the treatment as administered in London, the provinces, and on the continent, I have learnt that insufficient attention is paid to the temperature of the room in which the treatment is given In order to get the best results and to avoid aggravating the symptoms, or even adding other ailments to that from which the patient is suffering it is essential that the temperature of the room should be maintained at such a level as will enable the patient to lie, in absolute comfort in a state of nudity, without any feeling of chilliness, and that all possible sources of draught should be excluded This is also true even when only a portion of the body is exposed

I have several cases in my mind where I am persuaded pain has been increased not alleviated, by the treatment simply and solely because during its exhibition they were positively shivering with cold And in two cases attacks of bronchitis intervened in elderly patients after seances from the same cause I am confident that ultra-violet treatment should always be administered in well-ventilated rooms provided with means for keeping them at a regular and decidedly warm temperature, and be free from all sources of draught Inattention to these details seems to be prevalent

I am, Sir, yours faithfully,

LEONARD MOLLOY

Harley street, W May 24th, 1927

THE *BACTERIUM PNEUMOSINTES*

To the Editor of THE LANCET.

SIR—We have read with great interest the account of the recent work of Dr G S Wilson in attempting to isolate *B pneumosintes* from cases of influenza during the recent epidemic (THE LANCET, May 28th p 1123).

We have ourselves been carrying out a similar investigation for the Medical Research Council, the results of which it is hoped to publish shortly. In the meantime we wish to record the fact that we also have been unable to isolate *B pneumosintes* in any of the 12 cases we have investigated.

We are Sir yours faithfully,

RONALD G CANTI,
LAWRENCE P. GARROD,
T MEYRICK THOMAS

Pathological Department, St. Bartholomew's Hospital,
London, E C, May 30th, 1927

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED MAY 21ST, 1927.

Notifications—The following cases of infectious disease were notified during the week:—Small-pox, 313 (last week 271), scarlet fever, 1513, diphtheria, 839 enteric fever, 57, pneumonia, 939; puerperal fever, 41, puerperal pyrexia 94; cerebro-spinal fever, 11 acute poliomyelitis 6; acute polio-encephalitis 1, encephalitis lethargica, 38, dysentery, 5, ophthalmia neonatorum, 120

Cases of small-pox were notified from the Counties of London 1 (Hackney) Derby 5 Durham 152 Lancaster 7, Middlesex 1 (Southall Norwood), Northumberland 29, Nottingham 5, Yorks, West Riding 59, Monmouth 54

Deaths—In the aggregate of great towns including London there were no deaths from small-pox, 1 (1) from enteric fever 57 (2) from measles 12 (0) from scarlet fever, 31 (13) from whooping-cough, 18 (6) from diphtheria, 43 (3) from diarrhœa and enteritis under two years and 46 (7) from influenza. The figures in parentheses are those for London itself

PRESENTATION TO A MEDICAL MAN—The Board of the Manchester Victoria Jewish Hospital on May 29th gave a lunch and made a presentation to Dr Nathan Charles Haring who has been honorary physician to the hospital since its opening in 1904, and the chairman of its medical board A further memorial to Dr Haring's work is the foundation of a bed in the hospital to be named after him.

artificial light and found that decomposition had been rapid and great; this ether, however, was impure to start with, and it is known that decomposition once started goes on rapidly under favourable conditions. Of these conditions the most important is the presence of light, and I think Dr. Wilson's suggestion of amber-tinted bottles for my apparatus is good, especially for hospitals. The British Drug Houses, Ltd., kindly conducted for me in 1924 the experiment of bubbling oxygen through their highly purified ether for a considerable time—viz., four hours—but the apparatus was protected from light. The vapour was condensed and collected in two fractions. Each of the fractions and the residue were found to be free from peroxides and aldehydes.

Dr. Wilson's precautionary measures include the discarding of "stale" ether, but he does not define "stale." I should like to suggest that the odour is a useful guide. An ether, a few c.cm. of which when allowed to evaporate from the hand give a disagreeable or pungent odour, should be discarded. Some ethers are not free from this odour on delivery; they should be rejected. Four specimens of used ether, three of which had been allowed to stand in my apparatus for 24 hours, were tested recently for impurities; two, which gave on evaporation this characteristic odour, also gave positive reactions for aldehydes and peroxides; two, which were free from odour, were also free from impurities.

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The whole question of the employment of married women bristles with difficulties, mostly imaginary. The objection of the Durham County Council to the husband being in possession of an adequate income seems a typical example of such a "difficulty." There seems to be a strong public opinion amongst the laity against the employment of married women. The point of view of the medical profession is, of course, different. It is obviously against the honour and interest of that profession that it should be entered by a number of women who intend to give up their work on marriage and merely regard medicine as an interlude until such an event occurs.

This is a matter to be taken up primarily by medical women themselves. It is clearly unjust that they should be allowed to take medical degrees and the D.P.H. and later be shut out from a large sphere of practice such as the Public Health Service.

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Rejection of the Bill Moved

Lord BANBURY, in moving the rejection of the Bill, said that one of its main features was a proposal to impose a charge or tax on certain members of the community He did not believe that their lordships had any power to impose a tax on any section of His Majesty's subjects He had always understood that the only body that could do that was the House of Commons and even in the House of Commons a tax could not be imposed unless it was proposed by the Government. If the Bill reached the House of Commons unless it was taken up by the Government he did not believe that it would pass. There was an absolutely identical Bill in the House of Commons introduced by a Socialist Member The names on the back of the Bill were one Socialist, one Liberal and Viscountess Astor. He (Lord Banbury) thought there could be no doubt that this was the Bill of Viscount Astor. and he would ask him why he did not bring it in himself Why did he hide behind a bishop? He did not call the provisions of this Bill popular control. He would like to use rather strong language about it if it had not been introduced by the right reverend prelate. If it had been introduced by Lord Astor he would say that it was a gerrymandering Bill It was a bad Bill, and it was very doubtful whether it would stop drinking If it did so the Board would be bankrupt, and he thought, therefore, that they had far better leave people to drink as much or as little as they liked. He had with him the statistics for 1925 of drunkenness in America which was a prohibition country, and these showed that the drunkenness in America was far greater than in England He thought that practically every country which had been foolish enough to enact a law of this kind had either reversed it or was going to reverse it

Two Aspects of the Drink Question.

Viscount ASTOR said that if he were the real father and author of the Bill he would not be attempting to hide behind anybody else. He would support almost any measure for progress, or almost any temperance proposal except a Bill to impose prohibition on the nation He wanted to make that quite clear He supported the Bill before the House because he thought it provided a constructive proposal for dealing with two aspects of the drink question There was what he called the alcohol question—that was to say the social evils which came from the unwise consumption of alcohol· and there was the question of the influence on the national life exercised by the drink trade. These were entirely different questions and the Bill made a real constructive proposal for dealing with both The commercial interest of the trade, organised as now on a competitive basis, was to stimulate the very maximum of consumption of intoxicants Those who were interested in the temperance question welcomed the fact that the nation was much more sober than before the war The Southborough Committee indicated the other day that we were more sober now because Parliament had reduced the number of hours during which drink might be sold, and had increased the price which the public had to pay That was to say that various Acts of Parliament which had been passed had increased the sobriety of the nation but they had all been opposed by the whole strength of the drink trade At the present moment the trade was doing all it could to abolish some of the Acts which had made the country more sober If they did so they would diminish the national sobriety Although the alcohol question was much better than it was it was still a problem, and drink was still a factor in the causation of our social ills. The trade had been kind enough to say that he ought to be kicked out of the Conservative party because he supported the heads of the churches on temperance reform. He hoped they would change their attitude, because with the new electorate the Conservative Party would find that they were standing on a shakier platform than in the past if they relied wholeheartedly on the support, coöperation, and direction of the licensed trade, since the people were realising that it was impossible to reconcile national interests with those of the licensed trade. The influence of the drink trade in public life had been condemned not only by Lord Rosebery but by other prime ministers He asked their lordships on which side they were going to be on the side of the trade or on the side of the State? He would not discuss the merits or demerits of alcohol. A committee of experts under the Privy Council had done this very fully, and he thought he could summarise what those experts said by indicating that in their opinion alcohol, broadly speaking was the alternative to effective performance Lord Dawson of Penn had indicated some of the value of alcohol as he saw it. As he (Lord Astor) remembered, Lord Dawson said that where one had dull speakers at a public banquet and one wanted to keep people amused and interested alcohol made them think that they were witty although they naturally did not possess wit· that where there were people who were not drinking alcohol they were dull whereas at an adjoining table where people were drinking alcohol they found wit and sparkle He thought that Lord Dawson also indicated that in the stress of modern life with all its rush and bustle if people insisted on what was called burning the candle at both ends alcohol might be a help How desirable it might be for people to go on burning the candle at both ends he (Lord Astor) did not know The more he studied the drink question he said frankly the less he was ready to be dogmatised in what was the right solution for any locality If the policy of "no licence" was wrong it could not win but if it was right they could not stop it. In his public life he had two great principles which had helped him through One was an abiding faith in the commonsense and patriotism of the British public and the other was an increasing realisation that right must always overcome wrong If their lordships had the same feeling they could support this Bill with confidence and without fear

Drunkenness Out of Fashion

Lord DESBOROUGH speaking on behalf of the Government said that he believed in elevating the whole tone of the people, and that had been done in a remarkable way for many years Drunkenness in this country had gone out of fashion among all classes and if they put down the great improvement in that respect merely to certain Acts of Parliament or to certain systems of licence which had been introduced since the war he thought that they were overlooking the great and gratifying fact that it was really the feelings of the people which had introduced this very great improvement in the habits of the people. He believed it was a wrong system to try to make people good by the votes of those with whom they did not agree Such a system had always failed The right way was by reason and argument to educate public opinion The Southborough Committee said in their report —

> We are of opinion therefore that while the schemes of State management at Carlisle Gretna and Cromarty Firth have already produced results which are of value much still remains to be done for the purpose of ascertaining what system or type of public house provides for the legitimate needs of the people without encouraging or fostering excessive drinking We are not satisfied that the case has been established for the extension of the schemes to any other particular area or place

As far as he could see those remarks would equally apply to a system of public management The Southborough Committee also added in reference to these schemes and he thought this was of importance —

> We are of opinion that they should be continued, and that the work on which they are engaged should proceed until such time as it is possible to make a more final estimate of the results which have been achieved "

That rather summed up the attitude of His Majesty's Government on this portion of the Bill—namely a provision for a vote on public or State management The Government could not at the present time without a great deal of further inquiry support any scheme of absolutely stopping licences with a time limit as suggested in this Bill The Government were and had been considering this very important and difficult question but they were not at present in a position, and would not be until much further investigation was made to draw up a Bill dealing with the matter though they hoped to review the whole subject at the earliest possible moment

The Removal of Temptation

The Duke of MONTROSE said he was just as fond of a glass of wine as any noble lord who hoped to kill this Bill, but he did recognise that there was in this country an evil of intemperance, and that there was an agitation to do something to remove that evil It was wise practical, and possible to favour a measure such as the one under discussion which while it preserved freedom of opinion for the community allowed them to do away with the undesirable temptation to push the sale of liquor for unlimited and unrestricted gain

Viscount SUMNER said that he gave every credit to the assumption that with trial and error it might be possible to run the system of public management with a moderate amount of public satisfaction But before that could be such a success as to be any substitute for the present system many years must elapse and he thought that those who were quite as earnest in the cause of temperance as the societies and speakers of whom they heard a great deal, would agree with him in saying that the wisest course they could pursue was to attack this evil indirectly It was to the spread of education, to the rise in wages to the training which was to be got in the judicious use of leisure that they must look for an extensive improvement in temperance

The Bishop of BRADFORD said it was a remarkable fact that every single denomination who belonged to the Temperance Council of the Christian Churches of England and Wales had given its approval to this particular Bill after careful consideration

On the motion of the Earl of PLYMOUTH the debate was adjourned until Tuesday, June 21st

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

VACCINATION BILL

THE text of the Bill introduced in the House of Commons by Mr GROVES to amend the law relating to compulsory vaccination has now been issued It provides that no person shall be subjected to any penalty or loss or disability of any kind for refusing to be vaccinated, or for refusing to cause any child or young person to be vaccinated No payment in respect of vaccination is to be made out of moneys voted by Parliament, or out of any local or general rate Sections 29 and 31 of the Vaccination Act, 1867, and Section 1 (3) of the Vaccination Act, 1898, are repealed by the Bill The Act is intended to come into operation on January 1st, 1928

HOUSE OF LORDS.

TUESDAY, MAY 24TH

LIQUOR (POPULAR CONTROL) BILL

The BISHOP OF LIVERPOOL, in moving the second reading of the Liquor (Popular Control) Bill, said the measure was first introduced three years ago by the late Bishop of Oxford, Dr Burge During the debate in 1924 the view was expressed that the Bill could best be improved not in Committee but by making a fresh draft and presenting it again That had been done, but the main principles remained as before The first was that there was a need and an opportunity for further legislation in this matter There was in this country a vast amount of drinking, doing a vast amount of harm, but not amounting to what the police called drunkenness and not ending in the police courts The progress that had been made during the last 20 years in this matter he willingly and thankfully acknowledged There was a decrease in drunkenness which could be proved, he thought, by figures, there was also something which could not be proved by figures, but must be a matter of opinion His impression was that there was an increase in sobriety, which was a very different thing The people of the country were realising two things The first was that an increase in sobriety—he did not mean decrease in actual drunkenness—meant an increase in efficiency, in national wealth and in public welfare, and the second was that there were powerful and quite artificial obstacles in the way of this progress People were asking why these obstacles could not be removed and why they could not be made free to drink as much or as little as they liked There were two ways of meeting that appeal In the first place they might impose upon the whole country a single solution to be applicable equally in every part That meant waiting until temperance reformers and other people were agreed as to what the solution should be and that was not a very near prospect The second method of meeting it was by conferring upon the inhabitants of local areas the right and responsibility of deciding how and to what extent liquor should be manufactured and distributed in their area That was the method of the Bill, which made possible a series of experiments from the experience of which the country might ultimately be able to proceed to a single uniform solution for all areas The areas were at present the City of London and the electoral divisions or in the provinces the county boroughs, municipal boroughs with a population of 50,000 and more, the existing licensing districts, and new housing districts which contained more than 1500 houses The franchise was the Parliamentary franchise, and the arrangement was that there should be a first preference and an alternative vote if the first preference was not carried That was to prevent the decision being made by a real minority of the voters

A "Local Option" Bill

The Bill was a true Local Option Bill Three choices were given The first was "no change," and a bare majority would preserve the status quo The next choice was what was called "reorganisation" There might be a certain number of areas in which people would say something like this "We want reasonable opportunities for drinking but we do not want to minister to the private interest of any individual or any company by having the consumption of drink in this area as high as possible We do not want to be continually reminded by expensive advertisements how thirsty we are, and we do want to be rid of the liquor influence in local politics" If that view prevailed a bare majority would turn the area into a reorganisation area and that meant that the whole of the manufacture and distribution of alcoholic liquor in that area would be managed by a central board of management assisted by central and local advisory committees They would get rid of redundant public-houses abolish grocers' licenses, do away with advertisements of liquor convert some public-houses according to local demands into places where food could be bought as well as drink, and secure that it was to nobody's interest that a large amount of drink should be consumed That meant disinterested management and followed the lines now prevailing in the Carlisle area The third option was called "no licence" There were a certain number of people in this country who believed that the only solution of their difficulties in regard to the liquor traffic was to abolish it altogether now Where that view prevailed not by a bare majority, but by a majority consisting of 55 per cent of the first preference votes, there would be no more licences at all Drink must not be sold or manufactured in that area, and if it was consumed there it must be by those who got it outside That was something very like prohibition, and here he quite recognised that they came up against one of the great difficulties of this Bill If they excluded that option they would certainly secure an amount of support in the country very much greater than that which the Bill had already secured But on the other hand, if they excluded that option they would also lose the support of many temperance societies and incur the active hostility of a few who would at once join the trade in opposing them They said that if they were going in for local option they had no right to rule out an opinion which was firmly held, whether rightly or wrongly, by a very considerable number of people just because other people happened to dislike it If they excluded the "no licence" option the Bill was wrecked, but he begged their lordships to remember that in speaking like this he was not arguing for prohibition, and also that the arguments against prohibition were not arguments against this Bill

Freedom in Revising Decisions

The Bill provided that areas should have a certain freedom in revising their decisions from time to time It was laid down in the Bill that the first polls should be taken three years after the Bill had been enacted, and the other polls four years later That was a doubtful point, and he did not think that they would lose very much if that requirement were dropped, and it was enacted that a fresh poll should be taken on the requisition of a certain number of voters However, the essential principle was that the polls were recurrent It was possible under this Bill for an area which had already decided to have periods of reorganisation to go forward, or as some might say backward, to prohibition On the other hand, an area which had had experience of a "no licence" period might come on reflection to desire that that should be modified If so, either could make the change, but neither of such areas having decided for reorganisation could go back to private ownership The last principle of the Bill was that during 15 years after its passing there should be compensation paid to all interested persons In the present Bill they had devised an easier and simpler scheme of valuation than that included in the 1924 Bill The new scheme of valuation was based on Section 20 of the Licensing Consolidation Act of 1910, and took market values as the standard both for valuation of licences and also for the valuation of bricks and mortar The Bill set up a Central Compensation Fund which was to be at the disposal of the Central Board of Management Into that fund came year by year, the trade levies The licensees would continue to pay as now, but the owners of tied houses (90 per cent of the whole) would pay an equivalent amount each year The compensation paid to owners of redundant houses under the Balfour Act of 1901 would cease This would result in a working capital which would come into the Compensation Fund at the rate of about £2,000,000 a year Unless the hopes of the prohibitionists in this matter were wildly exceeded, he thought that there was no chance of more areas going dry than could be comfortably managed by the finance of the Bill The Home Secretary had powers to postpone the second or third poll for a year if he found that the funds were not likely to be able to sustain the charges that might possibly be thrown upon them Further the Board of Management would be able under this Bill to borrow, with leave of the Home Secretary, upon security of their Compensation Fund, backed, if necessary, by the receipts of customs and excise He was not one of those who regarded the drink trade as a wicked trade or who regarded brewers and wine merchants and publicans as having bad consciences or no consciences at all The real wrong was that the trade should be left in a position which seemed to impose upon it an obligation so unwholesome and dangerous Forty years ago Lord Rosebery said "If the State does not control the liquor traffic the liquor traffic will control the State" He (the Bishop of Liverpool) saw the danger coming nearer and nearer Owing to the enormous influence wielded directly and indirectly by those who were concerned to uphold the liquor traffic they were approaching a state of things perilously near the corruption of our political system Sooner or later the country would have to tackle this question, and he did not think it could be solved unless they took the trade clean out of private hands altogether sold in this country will now, by virtue of the Therapeutic Substances Act, 1925, come under official control and have to conform to prescribed standards of potency and purity My right hon friend proposes to give some further consideration to the question, but it seems doubtful in view of the foregoing observations whether any departure from present practice would be justified

Dr Davies asked if Sir Kingsley Wood had seen the letter on this subject from Dr S Monckton Copeman, who was one of those who originally used "glycerinated lymph," which appeared in the *Times* that morning? Having in mind the prevalence of small-pox, would it not be possible *to see that Government lymph was sold to practitioners*

Sir Kingsley Wood said that there was no mention in the letter to the *Times* of the very *important* fact that under the Therapeutic Substances Act, which came into force in August, all lymph sold would have to come under official control and to conform to prescribed standards of potency and purity

Sir W Davison asked whether, having regard to the nature of an epidemic of small-pox, it would not be desirable to make some temporary arrangement until August to supply lymph to any practitioners who desired to have it.

Sir Kingsley Wood said that in all cases where there was an epidemic arrangements were made with the medical practitioners for the supply of Government lymph Under the Therapeutic Substances Act the natural desire which everyone shared that all lymph should be of the proper standard of efficiency would be achieved

Foot-and-Mouth Disease and Swiss Condensed Milk

Major Ainsworth asked the Minister of Health whether, in view of the existence of *foot-and-mouth* disease in Switzerland, he was satisfied that the large quantities of condensed milk imported into Great Britain from that country were free from contamination, and, if so how this deduction was formed —Mr Guinness replied I am informed that the process of condensing milk necessitates the maintenance for some time of temperatures which are sufficient to destroy the virus of foot-and-mouth disease

TUESDAY, MAY 31ST

Sickness in the Shanghai Defence Force

Mr Thurtle *asked the Secretary of State for War* the number of troops of the Shanghai defence force who had been admitted to hospital as a result of sickness *up to the* time of the latest report received by his department —Sir L Worthington-Evans replied I am unable to state the total number of admissions to hospital, but the average weekly number of officers and men of the Shanghai defence force and the permanent garrison at Hong Kong, including Indian troops, who were in hospital during the four weeks ending May 20th was *15 and 800 respectively*

Nervous Shock Caused by Motor Horns

Mr Pethick-Lawrence asked the Home Secretary whether he had received complaints as to cases of nervous shock caused by the unnecessary use of *strident* motor horns, and whether he proposed to take any action in the matter —Colonel Wilfrid Ashley replied I am aware that unnecessary noise is sometimes made by motor horns The point has been under consideration in *connexion* with the Draft Road Traffic Bill, but it seems to me more a question of education in the courtesies of the road than a matter for legislation, as it would obviously be extremely difficult to lay down a definite and enforceable standard of noise

Categories of Certified Milk

Mr Hurd asked the Minister of Health what was the number of licensed producers of graded milk, that was to say in the three categories of Certified, Grade A (T T) and Grade A respectively, the amount of the licence fee in each case and the total amount of such fees collected during the past year, and whether, *in view of the deterrent effect* of such fees upon the production of milk of guaranteed cleanliness, he would abolish these charges and regard *the work of the Ministry's* inspectors in this sphere as a public health service —Sir Kingsley Wood replied The numbers of licensed *producers* of Certified, Grade A (tuberculin tested), and Grade A milk in England and Wales on March 31st last were 121, 150, and (at least) 266 respectively The amount of the annual licence fee in each case is Certified, £5 Grade A (tuberculin tested) or Grade A, £1 1*s* (or if the milk is bottled on the farm, £3 3*s*) The total amount of the fees paid to my department in respect of *producers'* licences for Certified and Grade A (tuberculin tested) milk for the calendar year 1926 was £690 18*s* 6*d* Licences to to producers of Grade A *milk are* granted by local authorities and my right hon friend regrets that he cannot state either the precise number of such licences in operation or the total amount of fees paid in respect thereof My right hon friend has no reason to believe that the licence fees, which represent only a part of the cost of inspection and bacteriological examination, have had a deterrent effect on the production of clean milk and he does not at present propose to abolish them

Obituary.

BRYDEN GLENDINING, M S DURH., F R C S ENG

Mr Bryden Glendining, who died at his home at Aspley Guise on May 19th, was born at Dunedin, New Zealand, in 1880 and came to England when he was 18 years of age After five years' study at Guy's Hospital he graduated in medicine in the University of Durham in 1903 and was appointed house surgeon at Guy's Later he was appointed resident surgeon at the Hertford British Hospital in Paris, and on the marriage of the Queen of Spain, went with her to Madrid, where he remained as her medical attendant for about two years On his return to England Mr Glendining became pathologist to the Chelsea Hospital for Women He took the F.R C S diploma in 1908 and graduated as M S Durh in 1909 Two years later, whilst continuing work at the Chelsea Hospital, he became associated with the Cancer Research Laboratories of the Middlesex Hospital, where he was elected to an Emden Research Scholarship For the following account of his work at this time we are indebted to one of his colleagues —

"During his three years' tenure of this scholarship Glendining wrote no less than nine papers, nearly *all of which were on the subject of* malignant disease in its relation to gynæcology Perhaps the most important of these was one entitled the Spread of Carcinoma by the Fallopian Tube, in which he put forward an entirely new view as to the invasion of the Fallopian tube by carcinoma from the uterus and ovary He adduced evidence to show that it may be brought about 'by cancer cells which, coming in contact with the fimbriæ or being swept into the lumen engraft themselves upon the columnar cells, and thence travel to deeper parts' This conclusion is of special interest in view of the opinion now held by most pathologists that pelvic endometriomatosis is in many cases due to shifting of the epithelium lining the tubes or uterus. With the caution which characterised him, he saw that the possibility of lymphatic permeation from the ovarian growths could not be entirely excluded"

This research was carried out at a time when Glendining was actively engaged in gynæcological practice He was appointed assistant surgeon to the Chelsea Hospital and was also obstetric registrar to the Middlesex Hospital, in 1912 he became gynæcological surgeon to the Hampstead General Hospital His future seemed assured both as investigator and surgeon, but in the following year a breakdown in health made temporary retirement necessary In 1914, however, he returned to London to take up work again at the Chelsea and Hampstead Hospitals, *also* joining the surgical staff of the Duchess of Bedford's War Hospital at Woburn This *appointment* re-directed his attention to general surgery and in this field also he showed unusual ability, his clinical and operative skill being reinforced by a wide knowledge of pathological processes Apart from an interval of illness in 1916 he went on working at Woburn until 1925 The war hospital was closed in 1920 but Mr Glendining continued his association with the cottage hospital until failing health made complete retirement from practice necessary "The last years," we learn, "*were borne with a patience* and courage that nothing could dim The blow of 1913 was one from which he never really recovered physically, but it brought into high relief the fine qualities of the man The splendid work he did in the face of such a handicap will always be remembered by those who were in any way associated with him in it"

Mr Glendining leaves a widow, the daughter of Captain G E Hodgson, and one son

HOUSE OF COMMONS.

WEDNESDAY, MAY 25TH

Ventilation in Theatres and Public Halls

SIR **ROBERT THOMAS** asked the Minister of Health whether he was aware that there was neglect on the part of local authorities to ensure the provision of adequate means of ventilation in theatres, cinemas, and other places of public assembly, and whether he would appoint a committee to inquire into this matter.—Captain **HACKING** (Under Secretary for Home Affairs) replied: A circular was sent in 1920 to the licensing authorities urging them to use their powers under the Theatres Acts, 1843, to ensure the satisfactory condition of theatres, including ventilation. The Home Office have not received any complaints in recent years. If the hon. Member will send me any information he has in his possession, I will consider it.

Sale of Pasteurised Milk

Mr. **BUXTON** asked the Minister of Health the number of firms or persons licensed to sell pasteurised milk and the estimated proportion of pasteurised milk to other liquid milk sold in England and Wales.—Sir **KINGSLEY WOOD** (Parliamentary Secretary to the Ministry of Health) replied: The number of pasteurising establishments in England and Wales licensed on March 31st last was 120, and the number of other places licensed for the sale of pasteurised milk at the same date was 573. My right hon. friend has no definite figures as to the quantity of pasteurised milk *as defined by the Milk (Special Designations) Order*, sold in England and Wales, but it might be very provisionally put at between 5 and 10 per cent. of the total amount of liquid milk.

Death-rate among Miners

Mr. **SUTTON** asked the Minister of Health the general death-rate from all causes, and also the death-rate of miners from all causes for the country as a whole; and whether he could give such figures separately for the various mining areas.—Sir **KINGSLEY WOOD** replied: I may refer the hon. Member to the table (Table C) on page 326 of vol. 3 of the Report of the Royal Commission on the Coal Industry, 1925, containing the following statistics furnished by the Registrar-General of the deaths in standard populations at ages of coal miners in various mining localities:—

1921–23.

Locality.	Deaths—Coal miners in standard population aged 25–65.
Durham and Northumberland	665
Lancashire and Cheshire	760
Yorkshire West Riding	666
Derby and Nottingham	560
South Wales, including Monmouth	747

The corresponding figures for all England and Wales in 1921–3 are: all coal miners (aged 25–65), 673; all males (aged 25–65), 661.

Statutory Vaccination Declarations

Mr. **DAY** asked the Minister of Health if his attention had been called to the recent case of King *v.* Southwark Guardians *ex parte* Peabody Donation Fund, and if he was prepared to take steps to protect the interests of parents making the statutory declarations of belief that vaccination would be prejudicial to the health of their children by amending the Vaccination Orders of 1898 and 1907, so as to ensure that such statutory declarations should not be open to public inspection.—Mr. **CHAMBERLAIN** replied: The answer to the first part of the question is in the affirmative. As regards the second part, as the register required to be kept under the Vaccination Act of 1867 would still be open to inspection, it does not appear that the course suggested would serve any useful purpose.

THURSDAY, MAY 26TH

Government Housing Subsidy to the L.C.C.

Mr. **DAY** asked the Minister of Health what would be the approximate Government subsidy granted to the London County Council for housing schemes in the current year; and the number of houses it was proposed to erect under this subsidy scheme.—Sir **KINGSLEY WOOD** replied: The London County Council will receive the appropriate Exchequer contribution under the Housing Act, 1923, and the Housing (Financial Provisions) Act, 1924, for each house erected by them and by private enterprise with their assistance, and it is anticipated that about 9000 such houses will be completed during the financial year. In addition, it is expected that during the year about 900 tenement dwellings for rehousing in connexion with improvement schemes under the Housing Act, 1923, will be erected by the Council in respect of which the Exchequer contribution will be one-half of the estimated average annual loss incurred. It is estimated that the total payments to be made to the Council in the financial year 1927–28 on account of all housing schemes undertaken since 1919 (including schemes of the metropolitan boroughs under the Housing Act, 1919) will amount approximately to £570,000.

Small-pox in Northumberland

Mr. **RUSSELL** asked the Minister of Health whether his attention had been called to an outbreak of small-pox in Northumberland; the number of cases notified up to date and the areas chiefly affected; whether or not the epidemic was on the increase; whether he was satisfied that the local authorities had powers sufficient to cope with the position and that those powers were being exercised; and whether the source of infection had been traced.—Sir **KINGSLEY WOOD** replied: Small-pox has been prevalent in Northumberland since 1924. The total number of notified cases, up to the end of last week, is approximately 2300. The areas chiefly affected have been Ashington, Bedlingtonshire, Newcastle-on-Tyne, Morpeth, Prudhoe, and Tynemouth. The number of cases in the county shows no signs of diminution at present. My right hon. friend is of opinion that the local authorities have all necessary powers if adequate use is made by the public of the facilities provided for free vaccination, and is advised that these powers are being exercised. He is unable to state the original source of infection.

Condemned Houses in England and Wales

Mr. **DAY** asked the Minister of Health if he had any statistics showing the number of houses condemned for human habitation in England and Wales to the last convenient date; and if he could state the average number of *persons occupying those houses and the average number* of rooms contained in each house.—Mr. **CHAMBERLAIN** replied: According to the annual reports of medical officers of health for the year 1925, the latest date for which information is available, 14,035 houses were reported in that year as unfit for human habitation in England and Wales. Statistics are not available giving the further information desired by the hon. Member.

MONDAY, MAY 30TH

Evil Odour from Water in St. James's Park

Sir **WILLIAM DAVISON** asked the Home Secretary, as representing the First Commissioner of Works, whether his attention had been called to the evil odour at present arising from the ornamental water in St. James's Park which in some cases had caused sore-throats to those sitting by the water; and whether immediate steps would be taken to secure a remedy seeing that there was a large children's playground close to the lake.—Captain **HACKING** replied: Attention has already been drawn to this matter, and measures are being taken which it is hoped will provide an effective remedy.

Sir W. **DAVISON** asked if Captain Hacking was aware that the same thing occurred in 1910 and 1911 and that then it was successfully dealt with. Had the Office of Works considered whether the same treatment might not be carried out now?

Captain **HACKING** said that the Office of Works, in order to effect economy, had not run fresh water continuously into St. James's Park lake. The pumping of water from the Serpentine, however, was creating a current, which would probably have the desired effect.

Supply of Government Lymph to Private Practitioners

Sir **WILLIAM DAVISON** asked the Minister of Health whether he was aware that a number of the public were unwilling to go to public vaccinators to be vaccinated and preferred to be vaccinated by their own family doctor, though they desired to be vaccinated with Government lymph; that the Ministry were refusing to supply private practitioners other than public vaccinators with the lymph supplied by the Government lymph establishment, in which the public had confidence; and whether, having regard to the desirability, in the public interest, of having as few unprotected persons as possible, he would make arrangements for the supply of Government lymph to all qualified practitioners on application?

Dr. **VERNON DAVIES** asked the Minister of Health if he was aware that many medical practitioners, recognising the excellence of the lymph supplied to public vaccinators by the Government lymph establishment, would welcome the opportunity of purchasing supplies of this lymph for the vaccination of their private patients, but were precluded from doing so; and, bearing in mind the prevalence of small-pox in the country, would he consider the advisability of removing this restriction so that medical practitioners who were not public vaccinators might have the opportunity of using this lymph which had such a high reputation for efficiency.—Sir **KINGSLEY WOOD** replied: The reputation of Government lymph has been achieved, not only by its quality and consistency, but by the close attention given to its results by means of official inspection and records. If Government lymph were to be made available to private practitioners generally it would appear very difficult, if not impossible, to ensure similar checks and controls. Moreover, I may point out that as from August next, all vaccine lymph normal habits of life. The description I am now giving carries no reflection on these, but in the larger number of cases the patients have erred in two directions—too much intake and too little output. Many of them recall the type of persons so well described by the epitaph in the country churchyard as "a lady of bilious temperament and lazy habits of life."

The predisposing causes in the production of gall-stones are well described by Sir Humphry Rolleston. He points out that the most important are a sedentary life and want of exercise. Stones are rare in outdoor labourers; they occur in pet dogs, but are absent in wild animals; they affect hard-working literary men and prisoners confined to gaol. I have had several cases in prison attendants, which is eloquent testimony to the good feeding provided by the Government. Gall-stones are found more frequently amongst the rich, who are lazy, clerks and devoted men of business, shoemakers, and in the poor of workhouses and asylums, than in active persons, whether the well-to-do or tramps. At Carlsbad, of 472 patients under treatment for cholelithiasis, more than 50 per cent. were professors, teachers, officials, and clergymen.

The effect of famine conditions is well shown by statistics from a Leningrad hospital. In 1914 the incidence of gall-stones in the total admissions was 0.47 per cent.; in 1919 it had fallen to 0.1 per cent. Mr. E. P. Pratt has worked out for me the corresponding figures at St. George's Hospital. During the three years before the war the ratio of gall-stone cases to the total admissions was 1 case in 156 admissions; in the three years following the war the ratio was 1 in 148, a slight increase. An interesting point, however, is that patients below the age of 40 formed 26 per cent. of the total before the war, but only 11 per cent. after the war, which suggests that those who were active during the war did not readily form stones, and fits in with the fact that gall-stones are rare in soldiers. It is thus evident that the type of persons most liable to cholelithiasis are not the best of subjects for operations upon the upper part of the abdomen.

Operative Indications.

In view of the remarkable frequency of gall-stones it is evident that their mere presence is no indication for operation; obviously the great majority of those who own them get through life comfortably without ever being aware of their existence. It is sometimes asserted that gall-stones are never present without causing symptoms. This surely cannot be true, for if so there would be two or more millions of people in England alone suffering from symptoms due to gall-stones.

When it is remembered, too, that the majority of the patients are not good surgical subjects it is obvious that the question of operation must be carefully considered in each individual case. My contention is that any policy which urges that the diagnosis of gall-stones should be followed by operation, more or less as a routine, is wrong. The pros and cons should be considered in every case; the general health of the patient must be investigated very carefully, and the risk of future trouble in connexion with the stones should be estimated as far as possible. Often the best advice we can give to the patient is to undergo a full course of medical treatment during a period of observation. There will still remain, however, a very large number of cases in which operation is clearly the wiser course. This applies particularly to those subjects who are otherwise active and healthy; it applies to the cases in which there have been recurrent attacks of colic, severely handicapping the patient, and it applies to nearly all cases in which there have been stones in the ducts or some other complication, such as an acute infective cholecystitis.

Incidentally, the number of stones present has some influence on the need for operation, and some idea of the number may often be got from X ray photographs or from the size of any stones that are passed. A persons fated to have gall-stones would be wise, I think, if he had any choice in the matter, to have one large stone. Such stones are apt to lie comfortably in the gall-bladder; they cannot shift, and most often they are discovered accidentally. Large numbers of small stones give rise to little trouble, but some of them are apt to increase to a bothersome size. The troublesome size is that which leads to a tight fit in the ducts. When there are 20–30 stones in the gall-bladder they are likely to be of this size and then most often lead to acute troubles.

Gall-stones and Cancer.

The fact that gall-stones are often associated with cancer of the gall-bladder is sometimes held as an argument in favour of pressing operation. Hurst tells us that there are 4 millions of people with gall-stones in England; cancer of the gall-bladder is relatively an uncommon disease, so that it becomes clear that only a very small proportion of gall-stone patients develop carcinoma of the gall-bladder. Does this risk justify the 1 per cent. mortality risk of operation? Another point emerges from the study of series of cases—namely, that the majority of patients in whom stones accompany growth of the gall-bladder have had nothing in their previous history to point to gall-stones, and so prophylactic operations would not have been possible.

It is very difficult to get evidence on this point from statistics, for they vary so considerably. It seems quite clear that when carcinoma forms it is usually secondary to stones and that the stones found are not the result of the carcinoma. Stones occur in 90 per cent. of the cases of primary carcinoma and only in 15 per cent. of the cases of secondary carcinoma. In the London Hospital series of cases, Walton records 18 cases of carcinoma in 409 gall-stone cases; Smithers found 31 cases in 1000, whilst in the St. George's Hospital series there were 10 cases in 228, a percentage of 4.7. But it must be remembered that these figures represent the most serious of gall-bladder cases, and take no account of the innumerable patients who never enter hospital.

The risk of carcinoma scarcely seems to me great enough to warrant its use as a pressing argument for operation, and I find that when members of our own profession unluckily develop gall-stones, they are inclined to take this view when when deciding what shall be done for themselves.

Cholecystectomy.

Excision of the troublesome gall-bladder is an attractive operation; when the appendix is so easily dealt with by removal, why not treat the gall-bladder in the same way? But the matter is not so simple as that. Many of the patients are little suited for what is sometimes called surgical interference; they are often much too fat and flatulent, and liable to chest complications. Moreover, patients of this type are apt to keep their gall-bladders tucked away far back in the depths of their voluminous abdomens, and for some of these the simpler operation of cholecystostomy is much safer. In any case, excision cannot be done unless the surgeon has decided that the bile-ducts are surely patent.

There is another point in connexion with this operation which has a great influence on the ultimate result. The bed from which the gall-bladder is excised must be covered with peritoneum; if a raw surface is left, adhesions will form between the pyloric end of the stomach, or other neighbouring parts, and the under surface of the liver. In many a case the ultimate results of the operation have been unsatisfactory owing to these adhesions.

A practical difficulty is that patients often walk into one's consulting-room or into hospital and demand removal of their gall-bladders. A surgeon should never promise this; if he is old enough, he will never even promise to find gall-stones, whatever may have been the clinical signs and whatever the X rays may have shown. I have had several instances in which a complete investigation has led to a confident

INTER-STATE POST-GRADUATE ASSEMBLY OF NORTH AMERICA

VISIT TO LONDON, JUNE 1ST–3RD, 1927

INAUGURAL MEETING

ON Wednesday, June 1st, the Inter-State Post-Graduate Congress, which has its headquarters at Dartmouth House, Charles-street, Berkeley-square, commenced a three-day session, including lectures and visits to various London hospitals A large gathering attended the opening ceremony, which was performed by Lord Reading, P C, the chair being occupied by Lord Dawson of Penn

Lord DAWSON (chairman of the British Committee), in welcoming the delegates from oversea, paid a tribute to the organising ability of the secretary of the Congress, Mr Philip Franklin Such a congress as this one should advance knowledge and stimulate thought to the advantage of all the nations of the world After all, points of view in medicine were remarkably similar, and for medical men speaking the same language the exchange of ideas was a simple matter In these days the calling and the scope of medicine covered a wider range and was broader-based than formerly In years gone by the science was mainly concerned with the developed disease in the individual, whereas attention was nowadays largely devoted to what could be termed threshold symptoms, to that stage of deficient or dislocated function which was the precursor of actual disease states Hence doctors were being brought more and more into relationship with people still active who wished to maintain the best possible health, and hence more was now learned about people's lives and work This meant that the professional man was now in closer contact with national life, leading to a wider grasp of social problems and the establishment of a permanent and abiding influence on international relationships

As representing this wider purpose nothing could be more fitting than the presence of the Marquis of Reading, the chairman of the Executive Committee of the English-speaking Union Lord Dawson pointed out that few people had been privileged to serve in so many capacities as Lord Reading, enriching each by his learning, intuition, and sympathy Lawyer, statesman, judge, ambassador, viceroy—Lord Reading was truly a citizen of the world Lord Dawson concluded by promising that London medical circles would offer of their best to those who had come across the Atlantic

Lord READING said it was his privilege to extend, on behalf of the English-speaking Union, a very cordial welcome to the delegates to this Congress He was delighted, as always, to perform any function he could, especially one whose object was to secure an even closer relationship between the medical men of the two great countries, it must be, he was convinced, to the benefit of both He had heard that a man at 40 was either a fool or his own doctor, and he had often thought that he might be both Such a congress as this went even beyond the objects of the English-speaking Union, for, as it was true that science belonged to no particular nation, gatherings of this nature were really more than international; they belonged to the universe, seeing that all discoveries given to the profession were for the benefit of the whole of humanity A meeting of representatives of many States and of Canada with its resultant contacts here would, he hoped, help to strengthen the ties already existing between the two nations One of the strongest links in this association was provided by the unity of language spoken by all the participants in the congress Added to this was the fact that in both nations the tradition was the same He trusted, indeed he felt confident, that when the members of the congress returned to their own homes they would carry with them thoughts and recollections of this visit, and that whatever other countries their itinerary might include, they would still regard this country as the nearest to them, and imbue in others a like idea That would tend to strengthen still further what he regarded as the most important factor in the advance of human civilisation—namely, that the American and the British people should understand each other, and that they should, wherever possible, work for the common purpose of benefiting humanity

Dr W B PECK, on behalf of the American visitors, thanked Lord Reading and Lord Dawson for their words of welcome and the Union for its hospitality The Congress, he said, represented 38 States, and some practitioners from Canada were also present Medical men did not, as a body, usually interest themselves in State matters, and they were bad politicians at best, but it was a constant stimulus to the doctor to know that he had, in his work, the encouraging sympathy of those who were highly placed in the Government of the country In London they did not seem to be in a strange land, it was like coming back home

GALL-STONES

The opening Paper read at the First Session

BY SIR CRISP ENGLISH, K C M G, F R C S

OPINIONS about the treatment of gall-stones mainly differ on two questions (1) what are the indications for operation? and (2) should the diseased gall-bladder be excised, or should it be emptied and drained? To get a true perspective we must appreciate the remarkable frequency of gall-stones, and we must study the types of persons who manufacture them

The Frequency of Gall-stones

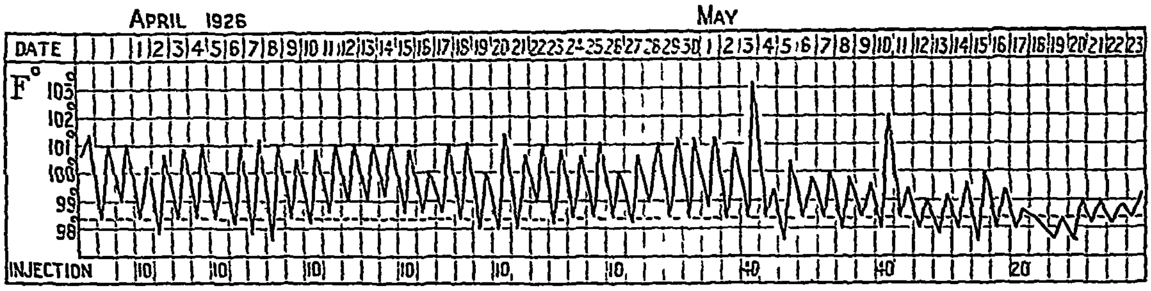
Their frequency is astonishing The available statistics vary considerably, but whatever allowances may be made, it is evident that quite a large percentage of any population possesses gall-stones Statistics taken from hospital post-mortem records put the percentage at from 3 to 15 when all ages are included, and a good deal higher if adults only are considered At St George's Hospital, in a series of over 4000 consecutive post-mortem examinations, gall-stones were found in 5 7 per cent The figures of last year were examined as regards autopsies on persons over 40 years of age, and stones were found in 10 per cent of the men and 25 per cent of the women, although in only one instance had the patient been admitted for gall-stone disease In series from other hospitals higher figures are often recorded, and it may be assumed that in better-class patients gall-stones are even commoner On the other hand, A J Walton, in a long series of post-mortem examinations at the London Hospital, found a percentage incidence of 3 48, a figure which is lower than most, and suggests that they are less frequent amongst the patients of the East End of London

Dr Arthur Hurst estimates that over 20 per cent of persons over the age of 20 have, or are going to have, gall-stones; that means 4 millions of people in this country, and a great many more in America Supposing that this is an over-estimate and there are only 2 millions, the number still remains remarkably high Of 100 people in this room, Hurst says that 20 have, or are going to have, stones Put it, if you will, at 10, the point that matters is that in all probability none of these has, or is going to have, symptoms In Piccadilly or Bond-street, where the well-favoured congregate, one person in every ten has gall-stones, but you will see no jaundice, you will not find any of them writhing in colic, you will get no evidence of flatulent dyspepsia Fortunately, stones, although so very common, are usually silent or latent, or the symptoms are so mild that they escape observation

Types of Patient.

Many of the gall-stone patients enjoy excellent health apart from their gall-bladder trouble and have a patient following only 10 c cm of serum He never rallied and died in a few weeks Compare this result with the first one I described where 40 c cm of the serum were used and the reactions followed by improvement In Case 2 the patient was doing badly until a sudden rupture of lung caused a violent reaction, after which he made an uninterrupted recovery. Yet I regard rupture of lung as one of the most serious complications of artificial pneumothorax Again, in Case 3, the patient seemed definitely to improve after pleural shock, but this accident, though fortunately very rare, is the one most dreaded in all cases where the pleura has to be punctured It is not only in tuberculosis that one sees improvement following shock During the war I treated several cases of enteric with colloidal gold given intravenously The patient generally had a rigor after the injection and the temperature would then fall to normal for a few days and sometimes would remain normal.

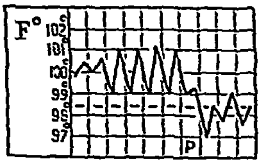
FIG. 1



Temperature chart in a case of pulmonary tuberculosis treated by injections of serum The figures at the bottom of the chart show the number of c cm of serum given on the various days

We know the effect of intravenous injections of mercuric chloride in cases of pneumonia or other acute infections It is quite impossible to believe that such a minute dose of the drug can have any direct effect on the micro-organisms Again, certain non-tuberculous conditions have been treated by shock produced by the intravenous injection of a foreign protein It would seem therefore that the action is largely non-specific and that a shock may stimulate certain unknown constituents of the body and do good or it may injure them and do harm

FIG 2



Temperature chart showing the effect of pleural shock occurring at P

FIG 3.

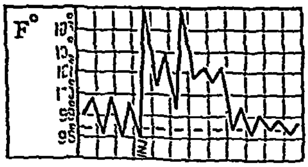


Chart showing the effect of an intravenous injection of 0 5 g sanocrysin

FIG 4

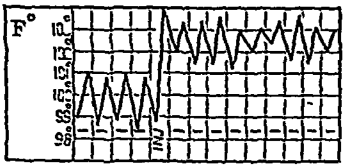


Chart showing the effect of an intramuscular injection of 10 c cm serum

In each one of the cases I have described the reaction was accidental and I was always alarmed at the time I believe that an acute flare-up may follow a reaction, and that this may be the beginning of a rapid spread of disease from which the patient soon succumbs Usually, however, he recovers from the reaction and is apparently neither worse nor better, but, as I have said, a considerable number of patients show a steady and continuous improvement after they have recovered from the initial shock.

Indications

When we consider these facts with a view to treatment we are at once faced with the difficulty that the reaction may make the patient worse or even prove fatal It certainly does not seem to me to be justifiable to cause such violent reactions as I have described intentionally, but I think that by small or graded doses mild reactions may be produced when other treatment has failed. In Case 1, for example, I gave six small doses of serum without any result, and as the patient seemed to be steadily dying I increased the dose and a reaction followed The temperature was definitely lowered, and it seemed to me wise to continue the serum in spite of the reaction I had of course, no intention of causing the serious shock which followed a subsequent injection

By causing a series of slight reactions I have occasionally seen improvement, though one does not see the striking and sudden improvement that may follow a serious shock. Usually the disease goes on unchecked in spite of the reactions. In children of 14 to 18 years of age one frequently sees a very acute form of pulmonary tuberculosis, and the outlook is always grave, but in these cases I have seen rapid improvement following reactions In such children the disease often spreads very quickly and I usually induce an artificial pneumothorax as soon as possible. If the disease is spreading in the other lung the pneumothorax cannot be kept up I have known cases where only two refills have been given when the treatment had to be stopped, yet steady improvement followed The very temporary and partial rest given to the lung can hardly account for the improvement, and I suggest that it is due to the shock or reaction caused by the pneumothorax. In severe acute cases I sometimes collapse one lung with a large initial quantity of air and give no refill but allow the lung to re-expand I have seen this method check the acute spread of the disease and be the starting-point of improvement

In treating patients by artificial pneumothorax I now give smaller refills than formerly, and I very rarely see a reaction Some years ago I might give as much as 800 or 1000 c cm of air as an initial dose. In those days reactions were frequent, but they were not uncommonly followed by a dramatic steadying of the temperature In another type of case the patient keeps fairly well in himself, but in spite of long periods of rest the temperature refuses to settle, remaining between 99°–100° F. and his condition shows no signs of improvement Now sometimes if the temperature is ignored and a little exercise is allowed the patient promptly begins to get better. In such cases I have seen the same result follow the use of tuberculin.

diagnosis of gall-stones and in which shadows have even been seen in the gall-bladder, yet at operation a healthy gall-bladder has been found of that delightful blue colour which we know spells innocence, and a chronic duodenal ulcer has been discovered to explain the symptoms instead The diagnosis between these two conditions is notoriously difficult and, in fact, sometimes they coexist, in these cases I believe that it is the duodenal ulcer which has been mainly responsible for the symptoms This impresses on one the very great importance of making a thorough examination of all the neighbouring parts, and especially of the stomach and duodenum, before the gall-bladder is attacked

There are some cases in which the wisdom of cholecystectomy will be doubtful after the usual thorough examination of the whole biliary system In cases of this type I am in the habit of doing an operation which is a compromise between cholecystectomy and cholecystostomy The gall-bladder with its contents can be removed at its junction with the cystic duct and then, instead of closing the duct, a drainage-tube can be put into it In this way the advantages of excision and drainage are combined, and the operation is often a much safer one than the ordinary excision and closure It involves a slight risk of leaving raw surfaces, and this part of the operation requires very careful attention

Broadly speaking cholecystectomy is the operation of election The absence of a gall-bladder brings no bad results R P Rowlands has reminded us that many animals are luckily born without gall-bladders and numerous human beings have lost it to enjoy better health Removal of the gall-bladder with the stones gives the best chance of permanent cure, it is often a simpler operation than drainage, its risk is usually no greater, and convalescence is much shorter The wounds heal quickly, whereas the drainage of cholecystostomy is often prolonged, the sinus taking some time to close The best plan is to keep an open mind before operation, and make no decision until the local conditions have been actually seen If the operator is in doubt, let him try to imagine what he would like done for his own gall-bladder if he were the patient

In conclusion, I would urge that there must be no hard-and-fast rules in our attitude towards gall-stones Stones are very common, often they give very little trouble, their owners are far from being ideal subjects for major surgery, so each case must have separate consideration If stones give rise to serious or repeated trouble, and if they are a definite handicap to the patient, then they should be dealt with, and cholecystectomy is the operation of choice

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SHOCK TACTICS IN PULMONARY TUBERCULOSIS

By L S T Burrell, M D, F R C P

In cases of pulmonary tuberculosis a shock or reaction may be followed by disastrous results On the other hand, it may happen that the bad effects of the reaction soon disappear and the patient is actually better than he was before it occurred This improvement is not entirely the result of a specific effect I am not concerned in this paper with whether or not certain substances—for example, sanocrysin—have or have not a specific action, but I believe that in their action there is some other factor apart from anything specific Not only tuberculin, but also copper, gold, normal horse serum, T A B, &c, can set up a reaction which may be followed by a definite improvement or may cause a rapid spread of the disease A fall of temperature must not be taken as the sole index of improvement for it usually occurs in cases of shock, it is seen, for instance, in perforation in typhoid fever Certain drugs such as cryogenin will keep a temperature normal in pulmonary tuberculosis, but they do not affect the course of the disease.

Clinical Records

I will give a brief description of a few cases to illustrate improvement following reaction resulting from different causes.

Case 1 —A girl of 17 began to ail at the end of 1922, and in April, 1923, she had extensive signs of tuberculosis in the left lung, had lost 20 lb in weight, was febrile, and had sputum-containing tubercle bacilli in large numbers Left artificial pneumothorax was induced and a year later she was free from symptoms and had gained 52 lb in weight She kept well until the beginning of 1926, when after a febrile attack, which was at first thought to be influenza, signs were found in the right lung, tubercle bacilli reappeared in the sputum, and she was admitted to hospital with a temperature as shown in Fig 1

On April 1st, 1926, she was given an intramuscular *injection of 10 c cm of an antituberculous serum* which had been prepared by Capt S R Douglas The same dose was repeated on the 5th, 10th, 15th, 20th, and 26th with very little result. She was then extremely ill and wasted and apparently dying, so on May 3rd I gave 40 c cm of the serum which was followed by a big reaction and definite lowering of the temperature afterwards On May 10th I gave another 40 c cm of the serum and again there was a reaction as seen in the chart

On May 17th I was giving more serum and when 20 c cm had been injected she had anaphylaxis—that is to say, she suddenly collapsed, stopped breathing, became pulseless, lost control of her bladder and rectum, and appeared to be dead She recovered, however, and from that time she began steadily to improve The temperature became normal, the pulse-rate fell from 120 to 80, tubercle bacilli disappeared from the sputum, and at the end of the year she was in a sanatorium walking five miles a day

Case 2 —A man of 22 developed signs of pulmonary tuberculosis early in 1921, and at the end of the year went into a sanatorium He then had signs of disease all over the right lung, sputum loaded with tubercle bacilli, and an evening temperature of 102° F Right artificial pneumothorax was started in December, 1921, but he remained ill and febrile until May, 1922, when he had a sudden reaction with increase of fever and pleural effusion developed

The sudden nature of this reaction and the fact that the intrapleural pressure went at once from −6 to +8 suggests that a perforation of the lung had taken place Within a month not only did the effects of the reaction wear off, but the temperature became normal and his whole condition gradually improved and he left the sanatorium free from symptoms in May, 1923 The pneumothorax was kept up until May, 1924, and since then he has kept perfectly well Now, three years later, he is still free from symptoms and is leading a normal life

Case 3 —A woman of 26 with extensive signs in the right lung, tubercle bacilli in the sputum, temperature 101° F, and signs of toxæmia, was being treated by artificial pneumothorax. During the fifth refill, when 300 c cm of air had been introduced and the intrathoracic pressure was −6 +1, she suddenly became very cyanosed, gasped for breath, and lost consciousness She recovered in half an hour and afterwards began to improve Fig 2 shows the temperature In this case the improvement did not last long, she relapsed and died about a year later

Case 4 —A woman of 30 had active tuberculosis in both lungs, tubercle bacilli in the sputum, and fever, as seen in Fig 3 A severe reaction followed the intravenous injection of 0 5 g sanocrysin, but when she had got over this the temperature remained normal She steadily improved and lost the tubercle bacilli, but this may have been due to the rest in bed and the action of the sanocrysin which was continued in smaller doses Anyhow the fall in temperature did directly follow the reaction

Case 5 —A man had a tuberculous sinus from the transverse process of one of the vertebræ This showed no sign of healing in spite of prolonged treatment He was having mild sunlight treatment, and one day after an exposure to the sun, which was more than double the usual, he had a reaction and high temperature and felt that he had done himself harm But the sinus began to heal after this and has shown no sign of breaking down since

The Dangers of Shock

Dr R C Wingfield treated a series of cases with intravenous injections of colloidal copper He showed me his charts, and in some cases his results were strikingly good, but he found the reactions to be so severe and alarming to the patient that he discontinued the treatment

I started by saying that these reactions may lead to disastrous results, and Fig 4 shows the temperature of

Royal Sussex County Hospital—Mr Bernhard Baron has contributed £10,000 to the Centenary Fund of this hospital

Garden Fête at Guy's Hospital—On Thursday, June 9th, at 3 p m , the Lady Mayoress of London, accompanied by the Lord Mayor and sheriffs, will open a garden fête arranged by the Guy's Hospital Ladies' Association in the hospital grounds

Belgrave Hospital for Children—The report for 1926 of this institution in the Clapham-road, a new wing of which was opened by the Prince of Wales in March last, states that the out-patients' department with over 66,000 attendances is "lamentably overcrowded" This is 8000 more attendances than in 1924 and if the increase continues and more convenient premises are not obtained, "the point will soon be reached when sick children will have to be denied relief" The provision of additional departments has had the inevitable effect of considerably raising the cost of each in-patient A clinic has been established in the out-patients' department to which all fractures are referred, and it is hoped that much valuable information will thus be gained

A Year of St Bartholomew's Hospital—The treasurer, Lord Stanmore, reports an increase of in-patients last year from 8655 to 9233 , cases of street accidents or illness numbered 2972 The steady fall since 1920 in the attendances at the special treatment centre of the venereal department reflects the general reduction throughout the country of the incidence of the disease The cost per patient is, however, so much above the average of other venereal clinics that a scheme is under consideration for transferring the work to the hospital itself The League of St Bartholomew's Hospital Nurses, which now has 1200 members, is asking for the means to start a country club to which nurses and probationers can go for week-ends or longer periods

The late Dr J Busfield—Dr James Busfield, who died on May 19th at the age of 66, was a well-known Enfield practitioner who had practised in the district for more than 12 years He was a Yorkshireman by birth, and before taking up medical work was an analyst in the Inland Revenue Laboratories at Somerset House This appointment began in 1884, and in the following year he won first class honours and the bronze medal in technology at the City and Guilds Institute , he also became a Fellow of the Institute of Chemistry Later he entered Charing Cross Hospital Medical School without, however, giving up his work at Somerset House, which continued for ten years In 1890 he won the Pereira Prize and five silver medals at the hospital, and in the following year qualified as M R C S Eng Settling in practice at Clapham Park, Dr Busfield became medical officer to the Clapham General Dispensary, and later on, before going to Enfield, he was for some years in partnership at Claygate in Surrey At Enfield he took a keen interest in municipal and national politics, and since 1922 had represented the Enfield Western Division on the Middlesex County Council, serving on the mental hospitals and other committees At the time of his death he was president of the Enfield Medico Ethical Society and was a member of the staff of the War Memorial Hospital He was also president of the local tennis club Dr Busfield leaves a widow and two sons and a daughter

Bombay Medical Council—At the meeting of the Council held on Feb 25th, Sir Norman Walker, representative of the General Medical Council of Great Britain, and Colonel R A Needham, who accompanied him on his tour through India, were present by invitation — The case of Mr Balvantrai Naranji Desai, practising at Vadi Falia, Surat, was concluded, and it was decided that his name be struck off the Register for unprofessional conduct —viz , advertising—the purport of the advertisement in leaflet form being as follows "Remedy for cent per cent cure of Hydrocele By Balvantrai N Desai, L M S"—An application from Mr Narayan Moreshwar Bhagwat for permission to be registered under Section 7 (3) of the Bombay Medical Act, on the ground that he had been working as a medical practitioner for the past 17 years, was rejected as the applicant had not completed a course of training in any medical institution —An application from Shaikh Abdul Kadir was also considered, and taking into consideration the services rendered by him during the war and his training at the Grant Medical College, his application was favourably considered as a special case —The name of Muhammad Sahib Bakshubhai was erased from the Register owing to his conviction for a cognisable offence —A revised code of medical ethics was adopted, copies being forwarded to all registered medical practitioners for information and guidance —The meeting closed with a vote of thanks to the President, Major-General A Hooton, I M S , in view of his impending retirement before the next meeting

Woman Police Doctor—The Manchester Watch Committee has decided for the first time to appoint a woman doctor to a position in the city police force It will be her duty to deal with all women who come into contact with the police, and especially with all cases of assault on children, through the whole of the Manchester district

Holiday Cruise for Medical Men—The travel section of the *Bruxelles-Médical* has arranged a three weeks' course to Bordeaux, Lisbon, Tangier, Algiers, Palma, Barcelona, and Marseilles, starting from Le Havre on August 10th or from Antwerp Particulars may be obtained from Dr F G Imianitoff, M R C S, at 29, Boulevard Adolphe, Max, Brussels

Progress of West London Hospital—It was stated at the annual meeting last week that 1926 established a record in the number of patients dealt with—3135 in-patients and 43,417 new out-patients It is expected that the nurses' home will be extended during the year and a new casualty department is to be begun at the earliest possible moment During the last two years 76 beds have been added

The late Dr J T Haworth—At the age of 65, Dr John Thomas Haworth, of Filey, died on May 22nd after a short illness The son of a Filey doctor, he received his medical education at the University of Glasgow and took the Scottish triple diploma in 1888 At first in partnership with his father, he had an extensive practice in the neighbourhood and for the past 31 years had been medical officer of health for the Filey district of the Scarborough Union Dr Haworth was one of the oldest members of the local golf club, being at one time its captain, and was a prominent Freemason He leaves a widow and one son

A Curious Bargain—Some time ago Mr Alfred Ramsden, a retired Dewsbury draper, entered into an agreement with the Dewsbury Corporation that in return for £25 they would maintain and keep in good order three graves in one enclosure, with their monument and kerbs, in the consecrated portion of Dewsbury Cemetery Mr Ramsden has given £1000 to the Dewsbury and District Infirmary on condition that the board undertake in perpetuity to see, by periodical inspections, that the Corporation keep their agreement

Donations and Bequests—The late Mr Fenwick Richards, of Bristol, left, among other bequests, £1000 each to the National Lifeboat Institution, the Royal Bristol Hospital for Sick Women and Children, the Bristol Eye Hospital, the Orthopædic Hospital, Bristol, the Cancer Hospital, Brompton, the Consumption Hospital, Brompton, and the Bristol Dispensary, Castle Green —The late Mr Samuel Scott Stanley, of Grove House, North-lane, Roundhay, Leeds, in addition to other legacies, left £15,000 to Leeds Infirmary, £5000 to Leeds Dispensary, £2000 to the Leeds Women's and Children's Hospital, £1000 to the Society for the Prevention of Cruelty to Children, £1000 to the Society for the Prevention of Cruelty to Animals, and £500 to the Leeds Maternity Hospital

The late Dr W G Pinching—Dr William Guy Pinching, who died on May 16th, at the early age of 48, had practised in Frampton for the last 15 years He was educated at the University of Oxford and at Guy's Hospital, where he played regularly in the Rugby fifteen He qualified as M R C S Eng in 1908 and held the appointments of house physician and house surgeon at Guy's, afterwards going to Pendlebury as resident medical officer to the Manchester Children's Hospital At Frampton, Dr Pinching was identified with the cricket and football clubs and with many other social activities Amongst other local appointments he was medical officer of health for Wheatenhurst Union He leaves a widow and two children.

Royal Free Hospital—The 248 beds were last year occupied by 4729 patients, who stayed an average of 17 19 days and cost £4 6*s* 11*d* per week each, an increase of 1*s* 1*d* over the cost in 1925 The usual increases in the out-patients' and casualty departments are reported Eight beds in single rooms were allocated to private paying patients, and the arrangement has given satisfaction and produced considerable income The committee record with great regret the retirement of Dr W P S Branson, who had been physician to the hospital since 1908 , he has been elected a consulting physician Increased accommodation is badly needed, and it is proposed to celebrate the centenary of the hospital next year by erecting a children's wing, providing 30 or 40 rooms for private patients and more than a dozen other adjuncts upon the adjoining property, about an acre in extent, in Gray's Inn-road For these purposes £200,000 will be required

I want, however, to make it quite clear that I do not advocate exercise in febrile cases. On the contrary, I regard rest as far more important than anything else in the treatment of pulmonary tuberculosis A woman who was getting on very well left a sanatorium and was having what she called sanatorium treatment at home One afternoon she could not resist joining in a game of tennis This produced a severe reaction, and she died soon afterwards of acute tuberculosis I have seen many cases like this, and I know too well the danger of over-exertion in this disease I know too well the danger of any reaction, however caused, and I always do my utmost to avoid one in any case that is doing well But when one is faced with a patient who fails to respond to any treatment and who is steadily getting worse one cannot forget that a shock may turn the scale in favour of recovery, and rather than allow him to die I think it is right to try the effect of a slight reaction It should be done with the greatest caution and its risks should never be forgotten

Medical News.

UNIVERSITY OF OXFORD —The University has accepted with gratitude the sum of £1000 offered by the widow and sisters of the late Dr George Herbert Hunt for the purpose of establishing a medical travelling scholarship in memory of him

RONTGEN SOCIETY —A general meeting of this society will be held on Tuesday, June 14th, at 8 15 P M, in the Barnes Hall, Royal Society of Medicine, 1, Wimpole-street, Cavendish-square, W 1 At 8 30 P M Sir J J Thomson, O M, F R S, will deliver the Tenth Silvanus Thompson Memorial Lecture, entitled the Structure of the Atom and Radiation —The Eighth Mackenzie Davidson Memorial Lecture will be delivered by Sir Humphry Rolleston at the same place on Thursday, June 30th, at 8 P M The subject will be Protection and other Radiological Problems Additional tickets for admission to the above lectures may be had from Mr Geoffrey Pearce, F R P S, 33, Newton-street, London, W C 2

UNIVERSITY COLLEGE, DUBLIN —The vacancies left on the staff of the College by the death in 1925 of Dr E J McWeeney, professor of pathology and bacteriology, and by the resignation, in the same year, of Dr J F O'Carroll, professor of medicine, have now been filled In each case the duties of the chair are divided Mr T T O'Farrell is appointed Professor of Pathology, Dr W D O'Kelly, Professor of Public Health and Bacteriology, Dr Henry F Moore, Professor of Medicine, and Dr James N Meenan, Professor of Systemic Medicine

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION —Mr T W Letchworth will give a special clinical demonstration at the Royal Eye Hospital on Thursday, June 9th, at 3 P M This demonstration will be free to members of the medical profession The Chelsea Hospital for Women will hold a two weeks' course in gynæcology from June 8th to 21st, instruction will be by operation and by lectures (fee £5 5s) From June 8th to 29th an afternoon course will be provided at the Central London Ophthalmic Hospital, with lecture-demonstrations and instruction in the out-patient department An operative class will be arranged if desired—the fees being £3 3s for the clinical course and £5 5s for the operative course The Children's Clinic, in conjunction with several hospitals, will give a special course in diseases of children from June 13th to 25th (fee £2 2s) The Hospital for Diseases of the Skin, Blackfriars, will hold an afternoon course from June 20th to July 1st, on each Tuesday special cases of interest will be shown From June 27th to July 9th there will be a course at the City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, during which the entire practice of the hospital will be open (fee £2 2s) Practical courses in anæsthetics and obstetrics can be arranged for by the Fellowship, which also makes arrangements for clinical assistantships in gynæcology A general course of instruction is also provided at the associated hospitals for which a separate programme is published Copies of all syllabuses and of the *Post-Graduate Medical Journal* are obtainable from the Secretary of the Fellowship at 1, Wimpole-street, London, W 1

SIR James Purves-Stewart has been elected a foreign member of the Copenhagen Medical Society

RADIUM INSTITUTE, MANCHESTER —At the annual meeting of the Manchester and District Radium Institute it was reported that the number of attendances had increased to 6775 from 6479 the previous year Longer treatment had been employed in certain types of cases There are now 11 beds for in-patients in the institute

THE medico-educational monthly journal, *The Child*, founded in 1910 and edited for nearly 17 years by Dr T N Kelynack will, after the issue of the June number, be conducted under the direction of an editorial board It will be published, as before, by Messrs John Bale, Sons and Danielsson.

INTERNATIONAL POST-GRADUATE COURSE AT CARLSBAD —A course having special reference to balneology will be held at Carlsbad from Sept 18th to 24th It is stated that Prof H H Dale, F R S, will give a lecture on the Theory of the Action of Insulin The course is open to all medical practitioners, and a Czecho-Slovakian visa will be supplied without charge and a 33 per cent reduction allowed on the State railways Further information may be had from Dr Edgar Ganz, Carlsbad

METROPOLITAN HOSPITAL SUNDAY FUND —At a reception held at the Mansion House on May 31st Mr Holland Martin referred to the decreasing amounts received from the annual collection on Hospital Sunday During the war the public had become accustomed to giving large sums to hospitals in the war area, and their charity was afterwards transferred to the London hospitals Between 1920 and 1926, however, the receipts fell from £121,000 to £87,000 Sir George Makins, F R C S, chairman of the distribution committee, stated that almost the whole of the money collected went to the hospitals

HOSPITAL PATIENTS AND NOISES —Some time ago the cinemas in Leicester were asked to screen requests to motorists not to use their hooters unnecessarily when passing the Royal Infirmary A private hospital in that city has just adopted a method of its own in the hope of reducing the noise of traffic upon its front where there chances to be a steep gradient White lines have been painted on the road at each corner of the building and large white boards have been placed on the walls with the words "speed limit, 8 miles," painted in bright red letters

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ROYAL SUSSEX COUNTY HOSPITAL —Mr Bernhard Baron has contributed £10,000 to the Centenary Fund of this hospital.

GARDEN FÊTE AT GUY'S HOSPITAL —On Thursday, June 9th, at 3 P M., the Lady Mayoress of London, accompanied by the Lord Mayor and sheriffs, will open a garden fête arranged by the Guy's Hospital Ladies' Association in the hospital grounds

BELGRAVE HOSPITAL FOR CHILDREN —The report for 1926 of this institution in the Clapham-road, a new wing of which was opened by the Prince of Wales in March last, states that the out-patients' department with over 66,000 attendances is "lamentably overcrowded" This is 8000 more attendances than in 1924 and if the increase continues and more convenient premises are not obtained, "the point will soon be reached when sick children will have to be denied relief" The provision of additional departments has had the inevitable effect of considerably raising the cost of each in-patient A clinic has been established in the out-patients' department to which all fractures are referred, and it is hoped that much valuable information will thus be gained

A YEAR OF ST BARTHOLOMEW'S HOSPITAL —The treasurer, Lord Stanmore, reports an increase of in-patients last year from 8655 to 9233, cases of street accidents or illness numbered 2972 The steady fall since 1920 in the attendances at the special treatment centre of the venereal department reflects the general reduction throughout the country of the incidence of the disease The cost per patient is, however, so much above the average of other venereal clinics that a scheme is under consideration for transferring the work to the hospital itself The League of St Bartholomew's Hospital Nurses, which now has 1200 members, is asking for the means to start a country club to which nurses and probationers can go for week-ends or longer periods

THE LATE DR J BUSFIELD —Dr James Busfield, who died on May 19th at the age of 66, was a well-known Enfield practitioner who had practised in the district for more than 12 years He was a Yorkshireman by birth, and before taking up medical work was an analyst in the Inland Revenue Laboratories at Somerset House This appointment began in 1884, and in the following year he won first class honours and the bronze medal in technology at the City and Guilds Institute, he also became a Fellow of the Institute of Chemistry Later he entered Charing Cross Hospital Medical School without, however, giving up his work at Somerset House, which continued for ten years In 1890 he won the Pereira Prize and five silver medals at the hospital, and in the following year qualified as M R C S Eng Settling in practice at Clapham Park, Dr Busfield became medical officer to the Clapham General Dispensary, and later on, before going to Enfield, he was for some years in partnership at Claygate in Surrey At Enfield he took a keen interest in municipal and national politics, and since 1922 had represented the Enfield Western Division on the Middlesex County Council, serving on the mental hospitals and other committees At the time of his death he was president of the Enfield Medico Ethical Society and was a member of the staff of the War Memorial Hospital He was also president of the local tennis club Dr Busfield leaves a widow and two sons and a daughter

BOMBAY MEDICAL COUNCIL —At the meeting of the Council held on Feb 25th, Sir Norman Walker, representative of the General Medical Council of Great Britain, and Colonel R A Needham, who accompanied him on his tour through India, were present by invitation —The case of Mr Balvantrai Naranji Desai, practising at Vadi Falia, Surat, was concluded, and it was decided that his name be struck off the Register for unprofessional conduct —viz, advertising—the purport of the advertisement in leaflet form being as follows "Remedy for cent per cent cure of Hydrocele By Balvantrai N Desai, L M S"—An application from Mr Narayan Moreshwar Bhagwat for permission to be registered under Section 7 (3) of the Bombay Medical Act, on the ground that he had been working as a medical practitioner for the past 17 years, was rejected as the applicant had not completed a course of training in any medical institution —An application from Shaikh Abdul Kadir was also considered, and taking into consideration the services rendered by him during the war and his training at the Grant Medical College, his application was favourably considered as a special case —The name of Muhammad Sahib Bakshubhai was erased from the Register owing to his conviction for a cognisable offence —A revised code of medical ethics was adopted, copies being forwarded to all registered medical practitioners for information and guidance —The meeting closed with a vote of thanks to the President, Major-General A Hooton, I M S, in view of his impending retirement before the next meeting

WOMAN POLICE DOCTOR —The Manchester Watch Committee has decided for the first time to appoint a woman doctor to a position in the city police force It will be her duty to deal with all women who come into contact with the police, and especially with all cases of assault on children, through the whole of the Manchester district

HOLIDAY CRUISE FOR MEDICAL MEN —The travel section of the *Bruxelles-Médical* has arranged a three weeks' course to Bordeaux, Lisbon, Tangier, Algiers, Palma, Barcelona, and Marseilles, starting from Le Havre on August 10th or from Antwerp Particulars may be obtained from Dr F G Imianitoff, M R C S, at 29, Boulevard Adolphe, Max, Brussels

PROGRESS OF WEST LONDON HOSPITAL —It was stated at the annual meeting last week that 1926 established a record in the number of patients dealt with—3135 in-patients and 43,417 new out-patients It is expected that the nurses' home will be extended during the year and a new casualty department is to be begun at the earliest possible moment During the last two years 76 beds have been added

THE LATE DR J T HAWORTH —At the age of 65, Dr John Thomas Haworth, of Filey, died on May 22nd after a short illness The son of a Filey doctor he received his medical education at the University of Glasgow and took the Scottish triple diploma in 1888 At first in partnership with his father, he had an extensive practice in the neighbourhood and for the past 31 years had been medical officer of health for the Filey district of the Scarborough Union Dr Haworth was one of the oldest members of the local golf club, being at one time its captain, and was a prominent Freemason He leaves a widow and one son

A CURIOUS BARGAIN —Some time ago Mr Alfred Ramsden, a retired Dewsbury draper, entered into an agreement with the Dewsbury Corporation that in return for £25 they would maintain and keep in good order three graves in one enclosure, with their monument and kerbs, in the consecrated portion of Dewsbury Cemetery Mr Ramsden has given £1000 to the Dewsbury and District Infirmary on condition that the board undertake in perpetuity to see, by periodical inspections, that the Corporation keep their agreement

DONATIONS AND BEQUESTS —The late Mr Fenwick Richards, of Bristol, left, among other bequests, £1000 each to the National Lifeboat Institution, the Royal Bristol Hospital for Sick Women and Children, the Bristol Eye Hospital, the Orthopædic Hospital, Bristol, the Cancer Hospital, Brompton, the Consumption Hospital, Brompton, and the Bristol Dispensary, Castle Green —The late Mr Samuel Scott Stanley, of Grove House, North-lane, Roundhay, Leeds, in addition to other legacies, left £15,000 to Leeds Infirmary, £5000 to Leeds Dispensary, £2000 to the Leeds Women's and Children's Hospital, £1000 to the Society for the Prevention of Cruelty to Children, £1000 to the Society for the Prevention of Cruelty to Animals, and £500 to the Leeds Maternity Hospital

THE LATE DR W G PINCHING —Dr William Guy Pinching, who died on May 16th, at the early age of 48, had practised in Frampton for the last 15 years He was educated at the University of Oxford and at Guy's Hospital, where he played regularly in the Rugby fifteen He qualified as M R C S Eng in 1908 and held the appointments of house physician and house surgeon at Guy's, afterwards going to Pendlebury as resident medical officer to the Manchester Children's Hospital At Frampton, Dr Pinching was identified with the cricket and football clubs and with many other social activities Amongst other local appointments he was medical officer of health for Wheatenhurst Union He leaves a widow and two children

ROYAL FREE HOSPITAL —The 248 beds were last year occupied by 4729 patients, who stayed an average of 17 19 days and cost £4 6*s* 11*d* per week each, an increase of 1*s* 1*d* over the cost in 1925 The usual increases in the out-patients' and casualty departments are reported Eight beds in single rooms were allocated to private paying patients, and the arrangement has given satisfaction and produced considerable income The committee record with great regret the retirement of Dr W P S Branson, who had been physician to the hospital since 1908, he has been elected a consulting physician. Increased accommodation is badly needed, and it is proposed to celebrate the centenary of the hospital next year by erecting a children's wing, providing 30 or 40 rooms for private patients and more than a dozen other adjuncts upon the adjoining property, about an acre in extent, in Gray's Inn-road For these purposes £200,000 will be required

I want, however, to make it quite clear that I do not advocate exercise in febrile cases On the contrary, I regard rest as far more important than anything else in the treatment of pulmonary tuberculosis A woman who was getting on very well left a sanatorium and was having what she called sanatorium treatment at home. One afternoon she could not resist joining in a game of tennis This produced a severe reaction, and she died soon afterwards of acute tuberculosis I have seen many cases like this, and I know too well the danger of over-exertion in this disease I know too well the danger of any reaction, however caused, and I always do my utmost to avoid one in any case that is doing well But when one is faced with a patient who fails to respond to any treatment and who is steadily getting worse one cannot forget that a shock may turn the scale in favour of recovery, and rather than allow him to die I think it is right to try the effect of a slight reaction It should be done with the greatest caution and its risks should never be forgotten.

Medical News.

UNIVERSITY OF OXFORD —The University has accepted with gratitude the sum of £1000 offered by the widow and sisters of the late Dr George Herbert Hunt for the purpose of establishing a medical travelling scholarship in memory of him

RONTGEN SOCIETY —A general meeting of this society will be held on Tuesday, June 14th, at 8 15 P M., in the Barnes Hall, Royal Society of Medicine, 1, Wimpole-street, Cavendish-square, W 1 At 8 30 P M Sir J J Thomson, O M, F R S, will deliver the Tenth Silvanus Thompson Memorial Lecture, entitled the Structure of the *Atom and Radiation* —The Eighth Mackenzie Davidson Memorial Lecture will be delivered by Sir Humphry Rolleston at the same place on Thursday, June 30th, at 8 P M The subject will be Protection and other Radiological Problems Additional tickets for admission to the above lectures may be had from Mr Geoffrey Pearce, F R P S, 33, Newton-street, London, W C 2

UNIVERSITY COLLEGE, DUBLIN —The vacancies left on the staff of the College by the death in 1925 of Dr E J McWeeney, professor of pathology and bacteriology, and by the resignation, in the same year, of Dr J F O'Carroll, professor of medicine have now been filled In each case the duties of the chair are divided Mr T T O'Farrell is appointed Professor of Pathology, Dr W D O'Kelly, Professor of Public Health and Bacteriology, Dr Henry F Moore Professor of Medicine, and Dr James N Meenan, Professor of Systemic Medicine

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION —Mr T W Letchworth will give a special clinical demonstration at the Royal Eye Hospital on Thursday, June 9th, at 3 P M This demonstration will be free to members of the medical profession The Chelsea Hospital for Women will hold a two weeks' course in gynæcology from June 8th to 21st, instruction will be by operation and by lectures (fee £5 5*s*) From June 8th to 29th an afternoon course will be provided at the Central London Ophthalmic Hospital, with lecture-demonstrations and instruction in the out-patient department An operative class will be arranged if desired—the fees being £3 3*s* for the clinical course and £5 5*s* for the operative course The Children's Clinic, in conjunction with several hospitals, will give a special course in diseases of children from June 13th to 25th (fee £2 2*s*) The Hospital for Diseases of the Skin, Blackfriars, will hold an afternoon course from June 20th to July 1st, on each Tuesday special cases of interest will be shown From June 27th to July 9th there will be a course at the City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, during which the entire practice of the hospital will be open (fee £2 2*s*) Practical courses in anæsthetics and obstetrics can be arranged for by the Fellowship, which also makes arrangements for clinical assistantships in gynæcology A general course of instruction is also provided at the associated hospitals for which a separate programme is published Copies of all syllabuses and of the *Post-Graduate Medical Journal* are obtainable from the Secretary of the Fellowship at 1, Wimpole-street, London, W 1

Sir James Purves-Stewart has been elected a foreign member of the Copenhagen Medical Society

RADIUM INSTITUTE, MANCHESTER —At the annual meeting of the Manchester and District Radium Institute it was reported that the number of attendances had increased to 6775 from 6479 the previous year Longer treatment had been employed in certain types of cases There are now 11 beds for in-patients in the institute

THE medico-educational monthly journal, *The Child*, founded in 1910 and edited for nearly 17 years by Dr T N Kelynack will, after the issue of the June number, be conducted under the direction of an editorial board It will be published, as before, by Messrs John Bale, Sons and Danielsson

INTERNATIONAL POST-GRADUATE COURSE AT CARLSBAD —A course having special reference to balneology will be held at Carlsbad from Sept 18th to 24th It is stated that Prof H H Dale, F R S, will give a lecture on the Theory of the Action of Insulin. The course is open to all medical practitioners, and a Czecho-Slovakian visa will be supplied without charge and a 33 per cent reduction allowed on the State railways Further information may be had from Dr Edgar Ganz, Carlsbad

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St Peter's Hospital for Stone, &c , Henrietta street, Covent garden, W C—Clin Assts
Seamen's Hospital Society, Dreadnought Hospital, Greenwich—Anæsthetist. 50 guineas Also H P and H S At rate of £110
Sheffield Royal Infirmary—H S At rate of £80
Stafford, Staffordshire General Infirmary—H S At rate of £200
Southampton County (Mental Deficiency Act, 1913)—Med Adviser £700
University College Hospital, Gower-street, W C—Surg Reg £250
University of London—University Chair of Pathology £1000 External Examinerships Also Laura De Saliceto Studentship £150
Victoria Hospital for Children, Tite-street, Chelsea, S W—Sen Res M O £250
Warwickshire, King Edward VII Memorial Sanatorium, Hertford Hill, near Warwick—Asst Res M O £350
West London Hospital, Hammersmith road, W—H P and H S Each at rate of £100
Willesden General Hospital, Harlesden-road, N W—Hon Surg to Ear, Nose, and Throat Dept Also Clin Assts to Out patients
Wolverhampton and Staffordshire Hospital—H S At rate of £150 Res Surg O £250
Worksop, Victoria Hospital—H S At rate of £170

The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Cottingham, Northamptonshire

Births, Marriages, and Deaths.

BIRTHS.

Ainscow—On May 22nd, at Hagley road, Birmingham, the wife of Dr J Arthur Ainscow, of a daughter

Canning—On May 26th, the wife of Dr H G R Canning, of Wimpole street, of a son

Osborne—On May 26th, at Ciola, Watford, the wife of Denis C Osborne, M B , Ch B , of a son

Smith—On May 27th, at 5, Cavendish-terrace, Stanwix, Carlisle, to Gwendoline (née Chave), wife of Dr J N Douglas Smith—a son

Wilson—On May 13th, at Bushey Heath, the wife of Dr E A Wilson, of a son

MARRIAGES.

Hodges—Legg—On May 26th, at St Mary Magdalene, South Bersted, Bognor, Lt -Col Aubrey D P Hodges, C M G , M D , late P M O , of Uganda Protectorate, to Hilda Margaret, youngest daughter of the late Rev F S Legg, M.A , formerly vicar of Christ Church, Mitcham, and late rector of Alfold, Surrey

DEATHS

Brodribb—On May 27th, at The Field, Penmaenmawr, N Wales, Charles Hildred Brodribb, M B , B S , Major, I M S (retd)

Coffin—On May 27th, at Carlton-vale, N W , Richard James Maitland Coffin, F R C P , Hon Assoc Order of St John of Jerusalem, Major (late R A.M C T), in his 85th year

Gibbs—On May 21st, at Caple gardens St Leonards-on-Sea, suddenly, Herbert J Gibbs, M.R C.S , L R C P Lond (late Medical Service, Singapore), aged 64

Glendining—On May 19th, at Aspley Guise, Bedfordshire, Bryden Glendining, F R.C S

Griffith—On May 21st, at the Caernarvon Cottage Hospital, following an operation Richard Griffith, M R C S , J P , late Major, 6th R W F , Lieut -Colonel, R A M C , of Penclogwyn, Portmadock, aged 53

Lacy—On May 19th, at Saumerez, Sunninghill, Alexander Gairdner Lacy, M D

Robinson—On May 25th, 1927, at 45b, Golders Green road N W 11 Isabel Kate, aged 72, widow of Dr Arthur H Robinson of St Mary's Infirmary, Highgate-hill

Smith—On May 24th at Bandrum Carnock, Fife, James Burnett Smith, M B , C M Edin , in his 70th year

Tay—On May 15th, at Lyndhurst, Oakhill road, Croydon, Waren Tay, F R C S , in his 84th year

N B—A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

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Osteopaths and the Medical Act.—In an annotation in The Lancet last week (May 28th, p 1143) it was stated that the deputy county court judge sitting at Marylebone had made a certain decision dealing with the right of an osteopath to recover fees We are reminded that the case was not, in fact, heard at Marylebone, but by the deputy county court judge sitting at Bloomsbury, as was stated in the report published in The Lancet of March 5th (p 510)

Notes, Comments, and Abstracts.

MEDICAL RELIEF IN RURAL INDIA.

(Being part of a Report to the Government of Bombay)

By Major-General Alfred Hooton, C I E , M R C S ,

ACTING DIRECTOR GENERAL, INDIAN MEDICAL SERVICE.

The demand for medical aid in rural areas is becoming more and more insistent The regular practitioners, fully qualified on modern scientific lines, are too expensive to be multiplied indefinitely for country work, and Government and the local authorities can only hope to keep a moderate number of them established in institutions, designed primarily to serve the poorer population of comparatively large centres and to deal with Government and municipal duties Apart from these, it is evident that some less expensive agency must be found for the villages and rural areas in general

Broadly speaking, the alternatives to the regular practitioners are the vaid or hakim, who in many cases is already available on the spot, and the possibility of creating some inferior class of whole-time or part-time practitioner, trained, in however elementary a manner, on modern scientific lines The question of choice is a most important one, involving as it does the future medical progress of India, and it is worth while to consider carefully the arguments for and against each alternative before committing ourselves to steps which it would be difficult or even perhaps impossible to retrace

The Indigenous Systems of Medicine

The attempts which have occasionally been made to brush aside the Ayurvedic and Unani systems of medicine with contempt may be at once rejected The former, at all events, can claim some of the most eminent pioneers of the profession, and it is certain that 500 years ago both the Hindu and Mohammedan physicians must have been greatly superior in many respects to those of Europe The names of Charaka and Sushruta may fairly be placed beside those of Hippocrates and the other ancient Greek physicians, and in point of time they preceded them The Ayurvedic school laid the foundations of modern anatomy, physiology, and pathology, and also discovered many useful drugs

But though the researches of the practitioners of the ancient Indian systems were most enterprising and praiseworthy, considering the conditions under which they were made, the absence of modern facilities led them into many errors Thus, although the vaids dissected bodies, it was by such crude methods that they confused arteries with tendons, and tendons with nerves, and although they recognised and described the main organs they had no accurate knowledge of their functions The theory of pathology which they evolved was merely speculative, and it is only by an entirely unjustifiable stretch of the imagination that the humours—*vat* (wind), *pitta* (bile), and *kapha* (phlegm)—can be made to fit into any reasonable scheme of modern pathology. The remedies they employed, moreover, were on an entirely empirical footing, and the doses were not properly worked out, so that when powerful drugs were used considerable risks of over-dosage were often run At the present day it is not uncommon to come across instances of such dangers Mercury is perhaps the most familiar example, and cases of necrosis and sometimes total loss of the lower jaw from excessive doses administered by practitioners of the indigenous systems are only too frequent Arsenic is also given by them, and gastro-intestinal irritation from its improper use is not unknown Inability to recognise conditions under which certain drugs cannot safely be administered is also a frequent cause of danger for men who have had no regular scientific training, and two cases may be quoted which appeared in the press last year · one, presumably of intestinal obstruction, in which a large dose of croton oil was given improperly by a hakim, and another of asthma, in which some unknown drug was administered In both death was reported to have followed almost immediately It has also to be added that practitioners of the indigenous systems keep their remedies secret, when they are able to do so, thus making research difficult and limiting the spread of knowledge

Modern Scientific Medicine

The system of medicine commonly spoken of as Western Medical Science is not a product of purely European growth Like astronomy and some other sciences it had its origin, not in the West, but in the East, and it is the result of the impact of modern scientific thought—mainly, no doubt, a Western development—on the ancient knowledge At the present time the modern system incorporates many of

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole street, W.

THURSDAY, June 9th.—LARYNGOLOGY AND OTOLOGY. Combined Summer Meeting. Laryngological Session at 2.30 P.M. *Papers*: Mr. F. Bradshaw Gillespy: Chronic Hyperplasia of the Upper Jaw. Mr. Walter G. Howarth: Some Points in the Technique of Laryngo-fissure. Mr. T. B. Layton: The Relation of Nasal Polypi to Inflammation of Accessory Sinuses of the Nose. Mr. Douglas Guthrie and Mr. Norman Dott: On the Occurrence of Brain Tissue in the Nose, the so called Nasal Glioma.

FRIDAY.—LARYNGOLOGY AND OTOLOGY. Combined Summer Meeting. Otological Session from 10 A.M. to 12.30 P.M. *Papers* on Progressive Middle-ear Deafness by Dr. Scott Williamson and Mr. E. Horace Richards, Mr. G. J. Jenkins, and Dr. Dan McKenzie. Demonstration: Dr. Graham Hodgson (introduced by Mr. G. J. Jenkins and Mr. F. W. Watkyn-Thomas): Some Radiograms of the Normal and Abnormal Labyrinth. *Paper*: Dr. Dan McKenzie: Posterior (mastoid) Drainage in Acute Suppuration of the Middle Ear. Laryngological Clinical Meeting at 4 P.M. Cases and Specimens will be shown by Mr. W. S. Syme, Mr. Harold Kisch, Mr. T. B. Layton, and others. 8.30 P.M., OPHTHALMOLOGY (Cases at 8 P.M.). Demonstration: Lieut.-Colonel H. Herbert: Photomicrograph Demonstration of the Anatomy of the Filtration Angle. Annual General Meeting. Election of Officers and Council.

SATURDAY.—LARYNGOLOGY AND OTOLOGY. Combined Summer Meeting (contd.). Otological Session (Clinical Meeting) at 10 A.M. (Cases at 9.30 A.M.). *Paper* (with Cinematograph Demonstration): Dr. Georges Portmann (Bordeaux): The Saccus Endolymphaticus and an Operation for Draining the Same for the Relief of Vertigo. Demonstration: Dr. Albert Gray: Stereoscopic Transparencies of Specimens of the Temporal Bone. Cases and Specimens will be shown by Dr. A. R. *Friel*, Mr. A. R. *Tweedie*, Dr. T. B. Jobson, Mr. Norman Barnett, Mr. E. Broughton Barnes, and others.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION, 1, Wimpole street, W. 1.

MONDAY, June 6th, to SATURDAY, June 11th.—FELLOWSHIP OF MEDICINE, Thurs., 3 P.M., Special Clinical demonstration at the Royal Eye Hospital by Mr. T. W. Letchworth. *Free to members of the medical profession.*—CHELSEA HOSPITAL FOR WOMEN, Arthur street, S.W. Special course in Gynecology. Mornings and/or afternoons.—CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd street, W.C. Afternoon course. Lecture demonstrations and instruction in the O.P. Department.

Further information from the Secretary.

SOUTH-WEST LONDON MEDICAL SOCIETY. BOLINGBROKE LECTURE.

WEDNESDAY, June 8th.—9 P.M. (*in the Bolingbroke Hospital, Bolingbroke Grove, Wandsworth Common, S.W. 11*), Mr. W. McAdam Eccles: The Romance of Fœtal Pathology. Open to any member of the medical profession.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.

THURSDAY, June 9th.—5 P.M., Sir F. Gowland Hopkins: The Task of Biochemistry (First Croonian Lecture).

NORTH EAST LONDON POST GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

TUESDAY, June 7th.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose and Ear Clinics. Operations.

WEDNESDAY.—2.30 P.M. to 5 P.M., Medical, Skin, and Eye Clinics. Operations.

THURSDAY.—11.30 A.M., *Dental Clinic*. 2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose and Throat Clinics. Operations.

FRIDAY.—10.30 A.M., Throat, Nose, and Ear Clinics. 2.30 P.M. to 5 P.M. Surgical, Medical, and Children's Diseases Clinics. Operations.

HOSPITAL FOR SICK CHILDREN, Great Ormond street, W.C.

THURSDAY, June 9th.—4 P.M., Dr. Donald Paterson: Chronic Appendicitis in Childhood.

ROYAL NORTHERN HOSPITAL, Holloway road, N.

TUESDAY, June 7th.—3.15 P.M., Dr. Bruce Williamson: Demonstration of Selected Medical Cases.

INSTITUTE OF PATHOLOGY AND RESEARCH, St. Mary's Hospital, W.

THURSDAY, June 9th.—5 P.M., Prof. B. J. Collingwood: Molecular Movement in the Living Body.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester square, W.C.

TUESDAY, June 7th.—5 P.M., Dr. A. Whitfield: Eczema (2).

THURSDAY.—5 P.M., Dr. S. E. Dore: Mycosis Fungoides.

UNIVERSITY OF SHEFFIELD POST GRADUATE CLINICS.

FRIDAY, June 10th.—3.30 P.M. (*at the Royal Infirmary*), Dr. Barnes: Clinical Cases.

Appointments.

GRAHAM, D. C., M.B., Ch.B. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Selkirk District of the County of Selkirk.

MCKEOGH, J. W., M.B., Ch.B., D.P.H. Aberd., Medical Officer of Health and School Medical Officer for Bilston.

WILSON, ARTHUR J., M.B., Ch.B. Edin., Honorary Assistant Physician, Coventry, Warwickshire, Hospital.

The General Infirmary at Leeds: RICHARDSON, A., M.B., B.S. Lond., F.R.C.S. Eng., Hon. Surgeon, and CHAMBERLAIN, D., Ch.M. Leeds., F.R.C.S. Eng., Hon. Assistant Surgeon.

Vacancies.

For further information refer to the advertisement columns.

All Saints' Hospital for Genito Urinary Diseases, Vauxhall Bridge road, S.W.—Res. Sen. H.S. At rate of £200. Also Non-Res. Jun. H.S. At rate of £150.
Ashton under Lyne District Infirmary—H.S. At rate of £150.
Barking Town Urban D.C.—M.O.H., &c. £850.
Belfast, Mater Infirmorum Hospital—Hon. Radiologist.
Bristol General Hospital—Hon. Asst. S. to Ear, Nose and Throat Dept.
Bristol Royal Infirmary—Asst. in Pathological Research on Cancer. £100.
Burton on Trent Infirmary—H.S. £150.
Buxton, Derbyshire, Devonshire Hospital—Asst. H.P. £150.
Cardiff, Welsh National School of Medicine—Asst. in Medical Unit.
Charing Cross Hospital, Strand, W.C.—Registrar. £100. Also Hon. Anæsthetist.
Chester Royal Infirmary—Third H.S. £150.
Chiswick General Hospital, W.—Second Hon. Consulting Surg.
City of London Hospital for Dis. of Heart and Lungs, Victoria Park, E.—H.P. At rate of £100.
Colchester, Severalls Mental Hospital—Asst. M.O. £510.
Durham County Hospital—Jun. H.S. At rate of £120.
East Sussex County Mental Hospital, Hellingly, Sussex—Jun. Asst. M.O. £350.
Elizabeth Garrett Anderson Hospital, Euston road, N.W.—Obstetrician.
Federated Malay States—Radiologist. $500–25–800 a month.
Glasgow Parish Council—Supt. of Poor Law Hospitals. £1500.
Hampstead General and North West London Hospital, Haverstock hill, N.W.—H.S. At rate of £100. Cas. Surg. O. at Out patient Dept. At rate of £100.
Herefordshire County Council and Bromyard Urban, &c., District Councils.—Asst. County M.O., &c. £685.
Herefordshire County Council and Dore and Weobley Rural District Council—Asst. County M.O., &c. £685.
Hospital for Women, Soho square, W.—Res. M.O. At rate of £100.
Liphook, Hants, King George's Sanatorium—Asst. M.O. At rate of £200.
London Hospital, E.—*Gynæcological and Obstetric Dept.*—Res. First Asst. £300.
Manchester City Education Committee—Two Asst. Sch. M.O.'s. £600.
Manchester, Hulme Dispensary—Res. M.O. £300.
Manchester Royal Infirmary—Asst. Surg. O. to Aural Out patient Department, two mornings weekly. £35.
Manchester, Royal Manchester Children's Hosp.—Sen. M.O. £300.
Manchester, Salford Royal Hospital—H.P., two H.S.'s, and Cas. H.S. Each at rate of £125.
Miller General Hospital for South East London, Greenwich road, S.E.—Cas. O. £150. H.S. £125. Also Hon. Asst. P.
North Middlesex Hospital, Edmonton, N.—Asst. M.O. £100.
Oldham Royal Infirmary—Three H.S.'s. Each at rate of £175.
Pinewood, Wokingham, Berks—Second Asst. M.O. £350.
Rochdale Infirmary and Dispensary—Jun. H.S. £200.
Royal Army Medical Corps.—Commissions.
Royal Chest Hospital, City road, E.C.—P. to Out patients.
Royal Free Hospital, Gray's Inn-road, W.C.—Res. Anæsthetist.
St. Giles Hospital, Brunswick square, S.E.—Asst. M.O. £7 7s. weekly.
St. John's Hospital, Lewisham, S.E.—Res. Cas. O. At rate of £100.

INCORPORATED ASSOCIATION OF HOSPITAL OFFICERS

Fourth Annual Congress

The Congress, held at the Royal Horticultural Hall was opened at 10 30 A.M. on May 27th by Sir Arthur Stanley, the President. The morning session was given up to a discussion on Hospital Policy with particular reference to the Raising of Funds, introduced by Mr Walter Kewley, House Governor of the Middlesex Hospital In the afternoon Viscount Hambleden took the chair, when Prof Beresford Pite, F R I B A., read a paper on

Hospital Planning and Construction

It was, he said, probably the ideal of hospital officers that English hospitals should become standardised The governing *principle in England* was *the restoration of the patient's* health, and every part of the building, together with light, air, food, and drainage was designed to that end The most recently completed English hospitals showed how the essential factors had been harmonised to create a perfected type, capable of variation only in the equipment of the service rooms, baths, stores, &c., and in their connexion with the main arteries of administration

The practice of building sanitary annexes in isolated towers was being discarded on account of expense, and they were tending to become more accessible and more spacious The "cut-out" *system of* ventilation, which placed entire reliance on natural light and air, was unlikely *to* be improved upon. It was peculiarly suited to the windy, changeable English climate with its small temperature range

Foreign and English Practice

In America, where the temperature varied *from great* heat to great cold, and where the population were sensitive to draughts, open disconnecting lobbies and corridors were generally avoided For natural ventilation was substituted a complicated system of mechanical draught and exhaust ducts These, although they worked well, were difficult to clean and the machinery was expensive The *arrangement* would *not* appeal to the English architect, *nor suit the* English climate, conversely the English plan would be unsuited to the requirements of the States On the *Continent*, no standard had yet been reached, and experiments, with necessarily a certain amount of serious loss, were still being made. Europe was still divided between the corridor and pavilion types of plan In the very big modern German hospitals the detached pavilion was planned with the "large camp" idea Here architectural arrangement imposes, with its long corridors, a certain amount of tyranny over the administrative service

The best English hospitals, said Prof Pite, showed no trace of the influence of scholastic or classical architecture. Practical devotion to purpose was the manifest aim of the architect, and the seal of his success He had ample scope for his ideals of beauty in serving the dignity and essential aim of the building upon which he worked Our "standard" design was still insular Neither the Continental corridor plan, with its series of rooms arranged on either side of a dignified passage, nor the avowed picturesqueness of modern Scandinavian hospitals, nor the stately platoons of partitions in the Teutonic building, expressed to us the ultimate perfection.

The Outlook of the Patient A Suggestion.

The normal plan of a ward, by placing a window between each bed for cross-ventilation made every patient face the light and gave *him only* the foot of the opposite bed for scenery Prof Pite suggested that a line of framed screens about 6 feet high and 18 inches clear of the floor should be placed down the centre line of each ward The patient would then be relieved of the light opposite, and would live in surroundings more like those of a normal bedroom, especially *if the screens were tinted* in a quiet colour and decorated with an occasional picture, or fitted with shelves *for vases of flowers* This would make for privacy and variety alike, and would in no way hinder ventilation, supervision, or service. Mounted on rubber-tyred castors, the screens could easily be moved for floor-cleaning, or transported from room to room. To *give the* patient a little more variety of outlook than he had *at present*, the speaker suggested arranging beds up and down the wards instead of across them. Circular or *semi-circular* wards, though perhaps not very economical nor easy to adapt to a site, were considered by some authorities more cheerful for the patients and more convenient for clinical purposes.

Lifts.

The introduction of the lift was the most radical *of all* architectural developments, it had revolutionised the plans of civil and domestic architecture. Without it the high buildings of the New World would be *impossible. In* England, however, where more ground was still available, it had done *no more than facilitate the* working of the standardised plan, and had not fundamentally changed it, any more than had the speaking-tube Nevertheless, it might yet exert great influence As long ago as 1903, the late Sir John MacAlister had advocated vertical planning as the solution of many difficulties in the expansion of intra-mural hospitals The patrons would no longer have to seek wide extra-mural sites, and the wards would be raised above the gases of the town into purer air Sir John MacAlister had conceived the slogan of a "tower of healing" before the American upward movement had been recognised as more than an advertising scheme Vertical planning would reduce space and distance without sacrificing any of the achieved results of the standard The one thing necessary was a strengthened faith in the elevator, both in principle and in operation We ran expensive risks in other departments of hospital equipment, and our "conservative nervousness" was happily tending towards progress in this direction also Prof Pite concluded by summarising the spirit of modern hospital design as an alert conservatism founded on experience but with an extending reach towards progress

Discussion.

Mr A Griffiths (Secretary, East Suffolk and Ipswich Hospital) praised the Voluntary Hospitals Commission for laying down valuable lines for the guidance of bodies building small hospitals capable of adaptation to small purposes He said that it was no good adapting an existing building to serve as a hospital; such buildings were a burden to the communities they served Testators sometimes tied their bequests up to such buildings: they would do more good if they left a field and a sum of money and allowed the architect and hospital manager to build according to need Of the essentials of a hospital the wards were the least important They might be replaced in ten years, but the vital things were site, drainage, water-supply, the administrative block, central heating, &c Yet it was possible to raise money from the generous public for wards and *not for the other things* Here education was needed The psychological value of trees, flowers, and beautiful surroundings was very great, and should be considered in laying out a hospital Since the war, however, the fresh-air craze had largely abated Fresh air was a good thing, but a little warmth, comfort, and convenience in working were equally important Convalescent homes (again the speaker acknowledged the services of the Hospitals Commission) should be planned as hospitals

Colonel H Hunter (Bristol Homœopathic Hospital) recorded the success of the screen idea as put into practice at two Bristol hospitals His governing body had made the experiment of fitting a hot-air circulating apparatus This had been a great improvement, as the warmth could be regulated and the radiators and dust-collecting fireplaces eliminated It was, however, rather costly His authorities had appreciated the value of beautiful surroundings to the extent of spending £11,000 on laying out a garden

Mr A B Keay (Glasgow Ear, Eye and Nose Hospital) pleaded for better provision for the recreation of the nurses and general staffs, and gave instances of newer hospitals that had met the need for dancing, badminton, &c.

Mr F A. Lyon (Seamen's Hospital, Greenwich) told how a small plot of waste ground at the Albert Docks had been converted into hard tennis courts for the staffs of two Greenwich hospitals

Mr McGowan (*Chairman*, Whitehaven Hospital) asked for members' experiences with wireless installations

Mr W Richardson (London Hospital) asked whether the lecturer, in designing the semicircular hospital, took into consideration economy and convenience of administration, which it was difficult to combine with medical requirements

Mr J Gibson (Sunderland Royal Infirmary) spoke of the difficulty of *regulating the temperature* in temporary buildings, and of the delight of patients in being transferred from the æsthetic surroundings of a hospital to the domestic atmosphere of a convalescent home.

Mr E W. Johnston (King's College Hospital) pleaded, as an engineer, for space in the design to admit the laying down of ducts for electrical and steam power, so that these could be led to any point where they might be needed X rays had been brought to the bedside of the patient, in the future it was likely that other apparatus would be required in the wards, and it was important to make structural provision for that future Power channels in a hospital were as important as blood-vessels in the body

Mr William Pite, F R.I B.A, deprecated the introduction of the American tower hospital with its plenum ventilation.

Mr S R Lamb (Liverpool Voluntary Hospitals' Council) suggested that to deprive neighbours of fresh air by constructing high hospital buildings was to defeat the end of that building He asked whether the St Andrew's Cross the old Indian remedies, and it is easy to substantiate the contention of the advocates of the indigenous systems that methods of treatment which have been hailed as new discoveries of the modern school have had their counterparts in the East long ages ago Various developments of hydrotherapy and the deprivation of salt in dropsy may be quoted as instances of this in medicine, and light splinting and the early movement of fractures in surgery Modern scientific medicine should therefore not be regarded with hostility as a stranger in India, but welcomed as a younger branch of the same family The ancient wisdom has returned, reinforced by new ideas and discoveries which make it many times more valuable Accurate dissection has taken the place of scraping a decaying body with twigs, and founded the modern science of anatomy; careful experiments have placed the science of physiology on a sound basis, and enabled us to ascertain the functions of the principal organs, post-mortem examinations and other scientific methods of research have taught us a great deal about disease, and medicine and surgery, apart from advances within their own bounds, have profited enormously from all these basic sciences as well At the present day modern medicine and surgery are probably as highly appreciated in the East as in the West by those who are in a position to judge for themselves and to command the services of the best practitioners The difficulty has always been to make them available for the poorer people in rural areas

The Alternatives

There are, as above noted, three main ways in which medical aid may be provided in rural district—the perpetuation and extension of one or more of the indigenous systems, the creation of a special class, trained in elementary medicine on modern scientific lines (like the inferior veterinary assistants who used to be known as salutaris), or the employment of some permanent Government servants, such as the primary schoolmasters, also trained on modern lines, on a part-time basis

The first of these alternatives, the utilisation of the vaids and hakims, is at first sight attractive, and has been carefully considered It has, however, serious objections, some of which have already been referred to, and on further discussion it was found that these objections were realised fully by many advanced Indian thinkers A very distinguished Hindu social reformer, to whom the question was referred, was strongly opposed to the proposal, and only one member of a small conference of Indian gentlemen specially interested in such subjects spoke in favour of the proposition to revive the indigenous systems for rural work The difficulty of training at once arises If the vaids and hakims are to be used, are they to be trained in Eastern or Western methods or both? At the present day to restrict treatment to the methods of the indigenous systems in the light of all the advances of the nineteenth century would be unthinkable, and to call the practitioners Ayurvedic and let them work on a basis of modern science would not be fair or honest

The Proper Point of View

This question has hitherto, unfortunately, been considered and debated more on political, racial, and even religious lines than on its merits The experience of Japan in this connexion is very instructive As everyone knows, that country was at first violently opposed to all Western innovations, and medicine was no exception to the general rule It is even recorded that in the sixteenth century many Portuguese and native medical men practising the Western system—such as it was in those days—were put to death As late as the eighteenth century, indeed, the Japanese believed that the viscera of the European barbarians were transposed—i e, that instead of being in the position affected by all good Japanese, their livers were on the left side and their hearts on the right, and it was only in that century, when the first post-mortem examinations were made on European lines, that this erroneous impression was corrected From that time onwards, however, all seems to have gone well The existing system, a branch of ancient learning originally imported from China, and no doubt very respectable though hopelessly antiquated, was gradually displaced and modern scientific medicine adopted, until now Japan can boast 27 medical schools (18 of university standing) and Kitasato and Shiga are listened to with respect and admiration throughout the civilised world As regards the ancient Chinese system, it was recently stated by a distinguished Japanese official that it has almost expired, and that only in the most remote places are practitioners other than those of the modern school to be found in Japan

A Scheme in Being

Proposals were put up to Government in 1923 for an experimental trial of primary schoolmasters for elementary medical and surgical aid in villages Thirty of these men are at present at work in selected villages in the districts of Poona, Bijapur, Sholapur, and Dharwar The scheme is shortly as follows Selected primary schoolmasters are posted for a period of training of two and a half months to civil hospitals where special arrangements are made for them The men are taught elementary anatomy and physiology as in ambulance classes, and given practical first-aid instruction in medicine and surgery They work in the wards and out-patient department, and the course is made as practical as possible At the end of it they are expected to be able to dress wounds and ulcers, to treat sore eyes, and to recognise and treat with simple remedies some of the more important diseases They are also taught elementary hygiene (ventilation, safeguarding of water-supply, prevention of malaria, &c) Training is, of course, carried out in the appropriate vernaculars The cost of training works out at about Rs 72 for each man The equipment (village aid cabinet) costs Rs 250, and the upkeep of one aid-post comes to Rs 300 per annum inclusive The scheme is therefore very economical

It has proved successful, and the Upacharaks, as they are called, are now in great request wherever they are stationed In Bijapur, particularly, their work has met with cordial recognition from official and non-official observers, and the village officers and villagers in general are almost unanimously in favour of its extension Requests are frequently received from villages which have no Upacharaks for aid-posts to be established A general review of eight months' work, from June 1st, 1925, to Jan 31st, 1926, was taken in the Bijapur district, and the following remarks apply to the ten centres now in operation there. In these ten centres, during the eight months, 31,122 cases were treated These included malaria, dysentery and diarrhœa, eye diseases, skin diseases, wounds and ulcers, and many other affections Very favourable reports were received from the collector, the assistant collector, the president of the district local board, and the civil surgeon, amongst others Equally good accounts have come from Poona, the other district in which the Upacharaks were early established, and it is hoped that a combined report on the whole scheme will shortly be available

Investigation and Utilisation of Indian Drugs

Government has recognised the desirability of investigating such Indian drugs as have not hitherto been incorporated in the regular pharmacopœias, where reasonable grounds exist for believing that they are worth examination, and the pharmacological unit of the Haffkine Institute has for some time past been engaged in research work of this description It is also realised that some Ayurvedic and other indigenous remedies, the qualities and proper doses of which are well known, may usefully be incorporated in the village aid cabinets As time goes on no doubt these may be added to

Conclusions

1 The Ayurvedic and some other indigenous systems did very good work in their day, but they are based on erroneous theories, and cannot bear comparison with the modern system of medicine founded on recent advances in science The remedies are largely secret, and there has been no proper investigation of their active principles or standardisation of dosage

2 As regards the regular practitioners of modern scientific medicine and surgery, it is generally admitted that they are superior to any others Where they cannot be provided—chiefly for reasons of expense—it is desirable to establish some inferior class of practitioner, and for moderate sized villages these may be on a part-time footing It has been shown that primary schoolmasters can be very useful in this capacity at a moderate cost

3 To revert to any other ancient systems of medicine would be a very retrograde step They are not founded on scientific principles, and are entirely out-classed by modern scientific medicine It is admitted that any revival of the ancient systems must be largely dependent on the assimilation of scientific knowledge Ayurvedic medicine, on these lines, would be Ayurvedic only in name, and any such scheme would be an unworthy subterfuge

4 Apart from a revival of the Ayurvedic or other indigenous systems as such, every effort is being made to investigate Indian drugs, and these should be utilised whenever it appears desirable to do so

A MISUSE OF BUSINESS METHODS

WE have received from the holder of a municipal post as bacteriologist and pathologist a copy of a circular which had been sent to him from an institute of pathology connected with a metropolitan hospital The terms of the circular are not fortunate Addressing our correspondent as a general practitioner, while he does not happen to be in practice, the circular credits him with having already requested the institute for "an outfit for clinical material for examination" This request was never made The circular appears to have been based on what in trade circles is known as a "follow-up letter" More circumspection should be employed at the institute.

An Address

ON

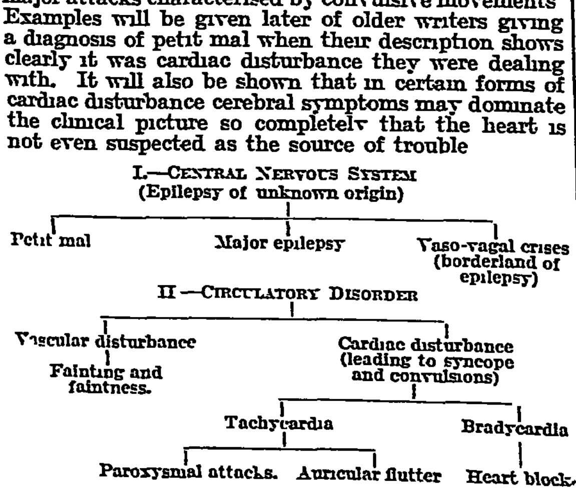
FITS AND FAINTS

Given before the Fellowship of Medicine

BY G A SUTHERLAND, C B E , M D EDIN ,
F R C P LOND ,
CONSULTING PHYSICIAN TO THE HAMPSTEAD GENERAL HOSPITAL , PHYSICIAN TO THE PADDINGTON GREEN CHILDREN'S HOSPITAL

A DIFFICULTY often arises in the diagnosis of an attack of sudden loss of consciousness as to whether it was primarily cerebral, that is to say, of an epileptic nature, or primarily circulatory, that is to say, a faint or fainting attack This difficulty is much enhanced by the fact that in all probability the doctor never sees the patient in an attack and has only the statements of onlookers to guide him. In the case of adults and older children the patient may be able to give such details of the onset and the recovery as will make the diagnosis clear In the case of young children no such information is forthcoming, and all the doctor has to guide him is the mother's statement of what she saw or thought she saw A physical examination of the patient may throw no light on the subject, because in many cases there are no evidences of cerebral disease or of any diseases or disorders in the circulatory system in the intervals between attacks It is therefore of the greatest importance for a doctor to have as full a knowledge as possible of the various causes of fits and faints and of their accompanying features The subject is a large one and only certain points can be touched on here

Progress in our knowledge of heart disease and heart disorders has increased our means of diagnosing more accurately between fits and faints, both those which are seen and those which are unseen It has enabled us to state definitely that certain forms of sudden attack, with loss of consciousness, which were formerly classed as being epileptic in nature are really due to cardiac disturbance This will be fully illustrated later on A comparison of the fits and faints under discussion brings out this interesting fact, that while in the case of primary cerebral disturbance there are attacks of minor and major epilepsy, so in the case of primary cardiac disturbance there are minor attacks characterised by fainting, and major attacks characterised by convulsive movements Examples will be given later of older writers giving a diagnosis of petit mal when their description shows clearly it was cardiac disturbance they were dealing with. It will also be shown that in certain forms of cardiac disturbance cerebral symptoms may dominate the clinical picture so completely that the heart is not even suspected as the source of trouble



Assuming for the moment that there are two varieties of fits and faints, a mild form of fainting with loss of consciousness, and a more severe one with convulsive movements superadded, we shall find that there are two primary sources of disturbance These two sources are the central nervous system and the blood circulation, as shown in the accompanying chart

EPILEPSY OF UNKNOWN ORIGIN

The term "epilepsy of unknown origin" may provoke the criticism of those neurologists who can find a cause for every form of epilepsy, and will classify every type of convulsive seizure amongst "the epilepsies" Attacks of petit mal and of major epilepsy are still recognised by the bulk of the profession My purpose is not to add to our knowledge of epilepsy but to direct attention to some attacks which simulate epilepsy and may be erroneously diagnosed as such So far as my reading goes these difficulties do not seem to have presented themselves to neurologists—that is to say, there is little or no reference to them in their text-books The mystery of epilepsy will be solved when we have a clear understanding of the pathogenesis of an attack of petit mal. It is in connexion with attacks diagnosed as petit mal and occurring during childhood that mistakes are most likely to arise. If it be definitely accepted that petit mal is not accompanied by any general circulatory disturbance, and that attacks simulating it in other respects are always accompanied by definite and distinctive circulatory disturbance, we have evidence that these attacks have a different origin from those due to epilepsy

Sir William Gowers is very insistent on the fact that the colour of the face does not change during an attack of petit mal, although there may be slight pallor after it Later on the face commonly becomes flushed Both he and Sir Clifford Allbutt lay great stress on the fact that circulatory disturbance does not occur in epilepsy The latter writes .[1]

> "I have never had my finger on the pulse of an epileptic at the earliest moment of an attack, but scores of times, as for instance in the wards of lunatic asylums, I have felt the pulse at the instant of the seizure becoming manifest , I have never, however, found any characteristic change in the rate"

An attack of petit mal presents as a rule a clear-cut picture, but in some cases, in addition to the sudden momentary unconsciousness, there may be other characteristics Amongst these Gowers[2] mentions giddiness, falling down, jerks or starts of the limbs, trunk, or head, a sudden sense of fear, a sudden scream, and a sensation about the heart or the epigastrium In those cases in which a sudden stab or other sensation is felt in the precordium or epigastrium the common diagnosis of a "fainting turn" will appear to have received additional confirmation The other characteristics help to support a diagnosis of petit mal and to exclude that of a simple fainting attack.

FAINTNESS AND FAINTING

A fainting or syncopal attack is usually ascribed to cardiac weakness, but this is hardly correct A strong man may faint at the sight of blood or when being vaccinated Fainting is much more common amongst people with sound hearts than amongst patients with diseased ones Fainting is quite common in children between the ages of 8 and 15 years, but rare at those ages in the subjects of heart disease

The underlying conditions in those who are subject to ordinary fainting turns would appear to be an unstable and weak vasomotor system. The normal response to some nervous shock or unusual sensation does not occur in the vasomotor system, and blood accumulates in the abdomen and dependent parts The result is cerebral anæmia and loss of consciousness The condition is usually short-lived, without further complications, and recovery rapidly follows the recumbent posture. The patient may fall suddenly, but as a rule has sufficient warning of the oncoming seizure in the shape of a feeling of faintness to allow of his sitting down or holding on to some support The pulse may be small and weak during a faint, but the rate is not markedly affected The contractions of the heart are temporarily weakened, but this is probably due more to the small quantity of blood entering the heart than to loss of contractile power The important factor in all such fainting or syncopal attacks is the condition of cerebral anæmia, and construction did not depend for its efficacy on being surrounded by open country, and whether the money difficulties of service and supply that hindered the development of the excellent "bungalow" system could not be overcome It was a mistake to build wards too permanently

The **Chairman** spoke with appreciation of the collaboration of medical men on hospital boards The ultra-permanent American Hospital had its drawbacks, for it was too difficult to alter if necessary The difficulty of the semi-permanent type was that it required a very large site and was extravagant in time and labour Auxiliary services were outgrowing the hospitals in which their accommodation had originally been ample, he pleaded for the centralisation of sunlight, X ray, and electrical departments in new buildings He predicted a great future for lifts American devices must, however, save labour, and must carry a fair constant load to pay for their keep Most large London hospitals had wireless, and the rule here was, "Avoid loud-speakers like the plague" A pair of ear phones should be fitted at each bedside

Prof **Pite**, in his reply, said that ducts were necessary evils Hospitals must be planned with them, but their use should be avoided wherever possible Infection got pumped well into them and was then next to impossible to remove Machinery should not be made the permanent feature of the building, it was the most transitory factor of all Pipe-heating might have to be superseded by plate-heating, for instance, and then the expense was enormous The only permanent part of the building was the walls Nurses' recreation quarters, he thought, should be right away from the hospital The circular corridor was shorter, and saved labour

The Exhibition.

A Hospitals and Institutions Exhibition, opened on May 20th by H R H Princess **Arthur of Connaught**, proved of interest and use to those concerned with the equipment and construction of the modern hospital, every department was represented in the collection of exhibits and a good idea could be formed of the standard reached in labour-saving appliances and new materials

The operating theatre equipped by Messrs Allen and Hanbury had a fine operating table with "Monel" metal top "Monel" metal is much used in American hospitals and is excellent for kitchen work as well as for sterilising drums and the like, it wears well, though it becomes duller with use and should have a future in this country unless the cost is too high The instruments shown were all of rustless steel, door-handles, fittings and taps of this metal retain their smart appearance without the labour of constant polishing The illumination of the table was of the "Holophane Circuit Type" in which several lights are concentrated on the field of operation, a type which is also common in America, though not possessing the flexibility of such fittings as the "Scialytic" The rubber floor was pleasant to walk on, but the perfect jointless flooring is still to be found The "Decolite" floor shown by Bell's United Asbestos Company has advantages of its own, and the imitation marble, "Calbonite," of the same firm, may prove useful for dadoes

The kitchen equipment department was fully represented, one of the most interesting exhibits being Benham and Sons' insulated food trolley, constructed on the principle of a thermos flask with containers for hot and cold food, the top in "Monel" metal and the sides in aluminium (a material which, unfortunately, has defects as well as merits) The dish-washing machines much used in America are evidently finding their way into this country, and two good types were shown—the "Victor" dish-washing machine and the "Crescent" where dishes are packed in trays and subjected to rinsing and disinfecting by jets of boiling water Many other labour-saving machines were shown, such as the "Hobart" mixer (whose merits are well known) and the electric potato peeler by Mabbott and Co

The question of heating, especially of private wards, is much debated at the present time and the merits of gas and electricity were both well set out, the former by the Gas Light and Coke Company, who showed illustrations of the work carried out at Westminster Hospital, and the latter by the "Electro-Vapour" radiators, which have been proved convenient in operating theatres, as for instance at the Hereford General Hospital The "flush hospital" door which is more than ever used in up-to-date hospitals, was represented by a type made by Ripper, Ltd, of Castle Hedingham, where a sound-resisting material, "Celotex," is used inside the framing

A collection of hospital plans would have been in place at the exhibition, but the plans of the Seamen's Hospital at Tilbury, by Messrs Collcutt and Hamp, though a very good and well-designed example, were the only exhibit of this kind The omission of the sanitary tower in the ward plan shows the post-war tendency to dispense with the cross-ventilated lobby which used to be considered an essential.

THE MEDICAL WOMEN'S FEDERATION.

The half-yearly meeting of the council was held at Manchester from May 12th to 14th, the President, Dr Christine Murrell, in the chair

A pamphlet prepared by the Venereal Diseases Standing Committee, dealing with the duty of the State in the control of venereal diseases, was referred to the local associations for consideration Appreciation was expressed of the work of the League of Nations in their report on the traffic in women and children, and a resolution was passed welcoming the appearance of the report and expressing the hope that the Committee of the League would continue its investigations from the health point of view, since the Federation was convinced that such investigation would demonstrate the medical futility of the whole regulation system A further resolution was passed recording the unshaken belief of the Council that the non-compulsory system of attempting to eliminate venereal disease in force in Great Britain and Holland has produced, and promises to produce, the best results, and protesting against any attempt to graft on to it any form of compulsion or to reintroduce the hurtful association of venereal disease with the police.

The Standing Committee for the Defence of Married Medical Women reported that a meeting had been held to consider what steps might be taken to support the proposed Married Women's (Employment) Bill The proposal to get up a petition to Parliament had been abandoned in view of the shortness of time, but many individual letters to Members of Parliament had been written

The Menopause Subcommittee reported that two questionnaires designed to carry out an investigation on a wide scale into the phenomena of the menopause had been widely circulated

The question of underpaid posts was dealt with in the report of the Standing Committee on Public Health To aid in dissuading women from accepting black-listed posts, a pamphlet was passed by the Council for distribution to newly-qualified medical women and D P H students, and to deans and secretaries of medical schools Cases of underpaid posts applied for or accepted by medical women during the last six months were reported Where their names could be obtained, candidates had been approached several of them showed great public spirit and retired The Council noted that no member of the Federation was among those who accepted these posts

A new Standing Committee on Psychological Medicine was formed, and reports were received of the work of various funds administered by the Federation.

THE AMATEUR GOLF CHAMPION

For the second time in the history of the amateur golf championship the honour has been won by a medical man Dr William Tweddell, who is a native of Durham, spent his early years in Yorkshire where he first learnt to play golf, showing considerable promise while still a boy During his years of service in the war he had little opportunity for practice, but when in 1919 he entered the University of Aberdeen as a medical student his golfing prowess soon became evident He was a member of Murcar Golf Club, Aberdeen, and played in the University team Dr Tweddell qualified in 1924 and after holding resident posts at the Royal Infirmary, Aberdeen, and in Manchester, he settled in practice at Stourbridge His success is no surprise to those who have watched his progress and will give great satisfaction to all members of his old university. We offer him cordial congratulations

BLOOD TRANSFUSION FOR BRONCHIAL ASTHMA

Since anaphylaxis, malnutrition, and anæmia may all be factors in the ætiology of asthma, transfusion of whole blood might reasonably be expected to have therapeutic value The anæmia would, of course, be relieved directly or by stimulation of the blood-forming organs, and it is possible that sensitisation to proteins might be changed Dr W T McBroom has recently recorded[1] a series of five cases treated by direct syringe transfusion He found that the asthmatic attacks ceased immediately in four of the cases, whilst in the fifth they were reduced in frequency and intensity In addition to the direct relief the general health improved and the weight increased The three younger patients had failed to respond to all other methods of treatment, the older ones had had asthma of long standing, and the resulting emphysema and embarrassment of the right heart could not be removed by transfusion It must be remembered, however, that patients with asthma are apt to improve for a time on any régime or after any operation that impresses them sufficiently and Dr McBroom's five cases are insufficient support for the conclusion that transfusion is a useful specific treatment for bronchial asthma —a conclusion which would conflict with the experimental results of other workers led me to the conclusion that there was no petit mal, and that the attacks were all of the same character and due to the cardiac disturbance In the case of the girl all of the attacks were of the same nature, and in all of them which were observed the heart-rate was abnormally rapid The sudden onset and the sudden cessation of this tachycardia coincided with the period of an attack Exertion seemed to induce an attack at times and it seemed to bring on some symptoms of an attack, which led the child to take less and less exercise With cessation of exercise, from progressive heart failure, the attacks ceased entirely In the case of the boy he has been under treatment for seven years for petit mal, and in all probability his attacks were really cardiac in origin, and not epileptic in character From the onset the attacks have followed usually on exertion, and as the years passed they came to be definitely associated with exertion or nervous shock The boy came to learn this fact for himself and would not over-exert himself because he knew it would make him faint This is very unlike a condition of petit mal The first suggestion of any heart trouble was at the age of 11 years Writing in 1926, his mother says —

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[1] Canadian Medical Association Journal, April 4th.

> "In August, 1925, he was much worse than he is now, by that I mean he then had to walk very slowly, and if he went upstairs his heart would beat at an alarming rate, or even to laugh much would make him feel bad "

At the present time one can bring on an attack of tachycardia by making the boy run, but he is very conscious of the cardiac discomfort thus induced and will not push his exertions beyond a certain point Comparing his present attacks with those described at the age of 4 years and onwards, one cannot find that there is any essential difference

Turning from my own experience of this type of case to that of others I find the following in an article on cardiovascular disease in Garrod's "Diseases of Children"[4] The section is on disturbances of cardiac rhythm and the paragraph is headed Tachycardia and Epilepsy —

> "There are some cases in which paroxysms of extreme rapidity of the heart's action occur in children who have previously suffered from epilepsy Two such cases have come under the writer's notice The first, a boy of 9 years, had been subject to epileptic fits up to the age of 4 years, and from infancy had attacks of what the mother termed palpitation of the heart Although the epileptic fits had ceased, about every three weeks violent attacks of palpitation occurred without apparent cause and always at night Between the attacks the rate was about 80 per minute and the action slightly irregular The second, aged 1 year and 5 months, four days after a fit, had some palpitation of the heart lasting several days, and since then had been subject to attacks about once a week These always commenced in the morning and lasted for some hours The heart was apparently sound Both these cases improved slowly under treatment with bromides "

In the light of my own cases I venture to suggest that there was no epilepsy here but merely the results of paroxysmal tachycardia

Hirschfelder,[5] in a chapter on paroxysmal tachycardia, lays stress on the fall of arterial pressure which induces cerebral anæmia, and is accompanied by weakness, vertigo, and even syncope In one patient the syncopal attacks had led some physicians to diagnose heart-block with the Stokes-Adams's syndrome, but further observation showed that the cerebral anæmia resulted not from bradycardia, but from paroxysmal tachycardia Esmein and Dougelot,[6] in an article on the syncopal form of paroxysmal tachycardia, describe this as being usually less severe than that of the Stokes-Adams's type Dr Arlie Barnes[7] found that—

> "cerebral manifestations, consisting of hemianopsia, temporary blindness, fainting, falling with or without loss of consciousness, and epileptiform seizures occurred in 15 of 104 cases of paroxysmal tachycardia that were studied "

These experiences of the symptoms associated with paroxysmal tachycardia must be kept in mind if one is not to be placed in the position thus described by the late Dr George Balfour[8] —

> "Nothing can make a man feel more helpless than to be brought for the first time face to face with a bad attack of tachycardia, of the nature of which he knows nothing, and, perhaps, may never even have heard of its existence."

AURICULAR FLUTTER

A study of auricular flutter throws further light on the occurrence of syncopal attacks associated with tachycardia An attack of auricular flutter can be distinguished in many cases from one of paroxysmal tachycardia only by means of an electrocardiographic record It is characterised by a very rapid ventricular rate, reaching sometimes from 200 to 220 beats per minute or even, according to some, 300. As a result the ventricular contractions at the onset may be so weak that the patient loses consciousness An attack of auricular flutter may be sudden, brief, without any previous symptoms of ill-health, and without any subsequent change in the heart If the attack is brief, and the patient has a syncopal attack it is very probable that a diagnosis of petit mal will be made Attacks of auricular flutter occur but rarely in infancy and childhood, they may develop in early adult life, but they are much more common in later life—the period of degenerative heart disease Syncopal attacks are quite common and are clearly due to cerebral anæmia, the weakened contractions of the left ventricle failing to maintain a sufficient supply of blood to the brain Sir James Mackenzie[9] records a number of cases in which the patient suddenly lost consciousness and fell down He says that some have attacks of unconsciousness lasting from a few seconds to hours, and that falling to the ground is not uncommon. In his monograph on "Auricular Flutter," Dr W. T. Ritchie[10] says that the initial symptom of each paroxysm is palpitation, which is often very distressing In some instances vertigo ensues as a result of the weak and extremely rapid ventricular action, and there may be occasional syncopal attacks He has noted that a paroxysmal attack of flutter may be excited suddenly and without any warning, under the influence of emotion or physical exertion It would appear from these observations that the cerebral symptoms of an attack of auricular flutter may be identical with those described in connexion with paroxysmal tachycardia

BRADYCARDIA AND HEART-BLOCK.

The type of bradycardia which is associated with heart-block is due to an interruption of the normal progress of the heart beat through the genetic system. Under certain conditions of heart-block the patient is liable to fainting attacks with loss of consciousness, and sometimes falls suddenly. In many cases of heart-block there may be a slow but regular action of the ventricle, in which no symptoms of the nature we are dealing with will arise In other cases there is a prolonged ventricular pause leading to cerebral anæmia and loss of consciousness The attack may be brief and sudden and the patient, if talking at the time, may simply cease and then resume where he left off This form of attack is very easily mistaken for petit mal In other cases there is loss of consciousness and the patient falls to the ground In more severe cases there is some twitching of the muscles of the face, and this epileptoid seizure may develop into a general convulsion—the well-known Stokes-Adams's syndrome These various results present in cerebral anæmia have been accurately measured by Sir James Mackenzie[11] in terms of the length of the ventricular standstill

> "When the ventricle stands still over 10 seconds cerebral symptoms dominate the picture First there is giddiness, then loss of consciousness, and if the standstill exceeds 15 seconds, twitching of muscles as those of the face, the neck, and arm follow If the standstill of the ventricle extends over 20 seconds violent convulsions and stertorous breathing are set up As soon as the ventricle begins to beat all these phenomena disappear, the patient quickly recovering consciousness."

when this has reached a certain stage loss of consciousness follows

The term cerebral anæmia is a convenient one but it lacks precision In all probability a syncopal attack is not due so much to the small amount of blood which reaches the brain as to the sudden fall in blood pressure which takes place in the cerebral arteries. As Gowers [3] has pointed out, consciousness is a function of the brain cells, and loss of consciousness, as in an ordinary fainting attack, cannot be due to a temporary absence of blood cells, for it is lymph and not blood which comes in contact with nerve cells. At the onset of unconsciousness the supply of lymph is sufficient for the metabolic processes required by functioning nerve cells He emphasises the different causes at work in the loss of consciousness in epilepsy and in fainting "We have to conceive the loss of consciousness as occurring spontaneously in epilepsy, and as due to a sudden diminution in the intracranial pressure in syncope acting as a mechanical influence" When I use the term cerebral anæmia in connexion with attacks of syncope due to circulatory disturbance, the above remarks on the accompanying fall in blood pressure should be kept in mind

Although there is such a thing as a fainting habit, possibly less common now than formerly, a faint is usually an isolated occurrence If a mother states that a child has "fainted" five times in a day or a week we naturally think rather of petit mal It is common to find a definite cause for a fainting turn, such as a hot stuffy atmosphere, an attitude requiring prolonged strain, a sudden fright or other nervous shock, or severe pain No such definite preceding cause is usually present in connexion with attacks of petit mal There is a certain fainting type of person, with the poor vasomotor tone already referred to, who is subject to chilblains in winter and blue cold hands in summer, who turns pale or flushes upon slight provocation, who often shows postural albuminuria, and whose staying power on exertion is slight The accompanying conditions of these fainting turns are such that a correct diagnosis can usually be made if all the circumstances are carefully inquired into, and if the sufferer is old enough to describe his sensations intelligently

CARDIAC DISTURBANCE IN THE GENETIC SYSTEM.

For clinical purposes it is useful to divide the heart into two parts, the contracting muscle and the genetic system The driving power of the heart lies in the contracting muscle, but the control of this function lies in the genetic system, which determines the rate and rhythm and regularity of the heart beat The genetic system is the name given by Sir James Mackenzie to that specialised tissue in the heart which commences at the sino-auricular node and extends through the auricles, the auriculo-ventricular node, and the auriculo-ventricular bundle to the ultimate branches of this bundle in the muscle-fibres of the ventricles He prefers the term genetic system to conducting tissues, as in this system is the starting-point of the heart beat and it does more than conduct impulses, its activity means an impulse transmitted from cell to cell, each cell discharging its energy in the process The fits and faints we are now going to consider are due to disturbance of the normal working of the genetic system

These disturbances in the genetic system are of two kinds. first, a condition of tachycardia or abnormally rapid action of the heart; and, secondly, bradycardia or abnormally slow action of the heart In each of these conditions there occur faints which may be diagnosed as petit mal, and convulsive seizures which may be diagnosed as major epilepsy In each of these conditions the syncopal attacks are due to the usual cause—namely, cerebral anæmia of a temporary character The heart fails to supply a sufficient amount and pressure of blood to the brain If this cerebral anæmia is sufficiently prolonged a convulsive seizure ensues

PAROXYSMAL TACHYCARDIA

This is a clinical term signifying a sudden increase in the rate of the heart from normal to 160-200 beats per minute, lasting for some seconds, or minutes (or hours), and followed by a sudden cessation of the tachycardia, with or without some irregular action at the close The patient is usually conscious of the new cardiac rhythm, feels a fluttering sensation on the chest, is conscious of the heart racing, and may have a feeling of exhaustion and prostration during an attack and afterwards Many such attacks occur in patients who present no other signs or symptoms of heart disease, who suffer little inconvenience during an attack, and who in my experience have grown up to perfectly healthy adult life. But there are other cases in which the onset of the tachycardia is attended by syncope and falling down, and other characteristics which may lead to a diagnosis of petit mal Examination of the patient during an attack reveals the condition of pathological tachycardia—that is to say, a heart-rate above 160 per minute It will be found that when the attack ceases and the symptoms pass off the heart-rate has returned to normal After watching a series of these attacks one is forced to the conclusion that the tachycardia is the cause of the seizure, and that in all probability the small amount of blood discharged by the heart has produced the syncopal attack If the patient is not seen in an attack the doctor may easily be puzzled and an erroneous diagnosis may easily be made Here are two cases in which I blundered as the result of my ignorance of this condition.

CASE 1 —A female child at the age of 2½ years began to suffer from screaming fits at night In an attack she was said to become stiff and turn grey in colour She was admitted to hospital at the age of 3½ years with a provisional diagnosis of petit mal There was no evidence of any organic disease and the child was healthy in appearance Attacks occurred in the hospital at irregular intervals, sometimes by day, sometimes at night Here is a description of a typical attack The child was sitting in a chair when she commenced crying, rested her head on the side of the chair, and then suddenly collapsed on the floor She was unconscious, the face was pale, the lips rather blue, and the pulse-rate was 180 per minute She recovered consciousness within a minute of falling but was rather dazed at first Two minutes later the pulse-rate was found to be 70, and then it gradually rose to between 80 and 90 In some of the attacks her limbs became rigid and her teeth were clenched In all of the attacks a condition of tachycardia was present, of a purely temporary character, but the rate, the sudden onset, and the sudden offset showed that a new rhythm was present in the heart during the attacks

CASE 2 —A boy of 4 years began to suffer from "fainting fits" and had five attacks in the course of the following 12 months An attack began with the boy's screaming loudly and falling down After a few minutes he went off to sleep and then woke up quite cheerful He had nose bleeding as the result of one fall and a bump on his forehead as the result of another The boy appeared to be perfectly healthy in every way and his doctor and I considered that the attacks were due to petit mal, and treated him accordingly For the next seven years he took much bromide but the attacks continued at intervals, the longest interval being two years He was never seen by us in an attack, and no question as to the diagnosis was raised until he was 11 years old He had had five attacks in the first six months of the year, which were described as "fainting" attacks without screaming They followed on some sudden shock or during active exercise He had been playing games at school but in a quiet way, with some one to run for him at cricket It was then found that any active exercise, like walking upstairs quickly, would bring on an attack of tachycardia, the heart-rate being 180 per minute The boy complained of the beating of the heart, felt generally uncomfortable, and looked dazed and anxious In about two minutes the tachycardia ceased abruptly, and after some irregular beats the normal rate of 60 was resumed He was old enough to describe his own sensations in connexion with the fainting attacks "When I faint my heart thumps and gallops and then it seems to try and stop, and then I seem to lose my bearings"

It may be suggested that in these two cases there was a double condition of petit mal and attacks of cardiac syncope Observation of the patients has

Some Aspects
OF
INFLAMMATION AND INFECTION *

A Course of Four Lectures delivered for the University of London at Guy's Hospital on May 20th, 27th, 31st, and June 3rd, 1927,

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LECTURES III AND IV *

IN the previous lectures we have discussed the different types of lesions which result from the damage of the tissues by various agents We have now to consider whether these observations are of merely academic interest or whether they have any practical bearing in helping us so to understand the inflammatory process that by the intelligent utilisation of our knowledge we can control it This is really what we have in view because, for practical purposes, inflammation and infection are, in the microbic diseases, synonymous terms The medical officer of health is perfectly justified in calling milk infected if it contains virulent bacteria; no one but a hyperpurist would object to his use of the word Again, a bacteriologist may properly describe a patient in whose throat virulent diphtheria bacilli are growing as infected, though he may exhibit no signs of illness But for the pathologist infection implies something more It implies the establishment and growth within the tissues of a micro-organism The mere presence of an organism is not sufficient to warrant the use of the word, there must also be definite changes in the tissues In other words, pathologically speaking, infection cannot exist without inflammation

The following experiment, which was suggested to me by Dr W E Gye, will make this point clear (Fig 1)

Twelve mice were inoculated into the right flank with washed and heated spores of *Vibrion septique* Six other mice were inoculated into the right flank with the same suspension of spores but with the addition of 5 mg of calcium chloride The following day these six mice were dead with typical gas gangrene, but the first 12 remained perfectly healthy Two days after inoculation one of them developed gas gangrene, but the other 11 were unaffected Four days after the original inoculation six of these 11 mice were inoculated into the right flank with 10 mg of calcium chloride, they died of gas gangrene within 36 hours, but the remaining five are still alive and healthy. In other words, the mere presence of the organisms was not sufficient to determine pathological infection, they remained latent in the tissues until defence-rupture was brought about

THE SPECIFICITY OF INFLAMMATORY LESIONS

It becomes of the first importance, therefore, to decide whether the different inflammatory processes which have been considered are really specific and invariable or, at any rate, sufficiently so to give a working basis to an attempt to combat infection Does the typhoid bacillus, for example, always produce the same reaction in the human body, and is this reaction so characteristic that we can with certainty distinguish it from the reactions brought about by other pathogenic microbes? In many modern textbooks the specificity of infections is definitely taught, and in the older literature we find much attention devoted to the various tissue changes which follow infection with different organisms But in practice the tendency nowadays seems to be to disregard this point of view altogether, and to wage a standardised, and quite illogical, warfare against all types of microbes Indeed, Powell White has recently expressed the view that the inflammatory process is not specific, but that any variations in reactions are due to the intensity of the irritant Even with our present imperfect knowledge this attitude is untenable, and we may reasonably hope that a closer analysis of infections will reveal further distinctions which have so far escaped us

It must always be remembered that the clear-cut observations of the chemist and physicist are scarcely within the reach of the biologist Individual animals vary enormously in their behaviour under experimental conditions, and local differences in the structure of the tissues in animals of different species make for further complications The mouse, for example, with its loose attachment of the skin to the body wall, permits of a localisation and concentration of an inoculum which can scarcely be obtained in the rabbit And in the dense collaginous cutaneous and subcutaneous tissues of the rabbit the reaction to an irritant is very different from that occurring in the delicate tissues of the mouse

If, bearing these limitations in mind, we examine certain of the inflammatory processes, we find that in those due to chemical or physical agents a high degree of specificity obtains Calcium and silica inoculated into the subcutaneous tissues of the mouse bring about a sequence of changes which are definite and regular, the reactions vary in intensity according to the doses administered, but in essential features they are always the same Turpentine, again, produces in the subcutaneous tissues of the rabbit a lesion which can scarcely be mistaken for anything else Similarly, more inert substances such as carbon, aluminium oxide, cholesterin, and simple foreign bodies, also give rise to characteristic lesions I mention only those reactions with which I am especially familiar, but I see no reason to doubt the possibility of recognising a whole range of specific non-bacterial inflammations No doubt many substances may call forth practically identical changes—there may, in fact, be a series of "group reactions"—but we may reasonably claim that in the normal animal a constant irritant will produce a constant inflammatory reaction

FIG 1.

Vibrion septique All inoculations into right flank.

	13 V 27	14 V 27	15 V 27	16 V 27	17 V 27	18 V 27	19 V 27	20 V 27
1	SPORES	—	+					
2		—	—	—	—	—	—	—
3		—	—	—	—	—	—	—
4		—	—	—	—	—	—	—
5		—	—	—	—	—	—	—
6		—	—	—	—	—	—	—
7		—	—	—	CaCl₂ 10 MGR.	+		
8		—	—	—		+		
9		—	—	—		+		
10		—	—	—		+		
11		—	—	—		+		
12		—	—	—		+K		
13	SPORES + CaCl₂ 5 MGR.	+						
14		+						
15		+						
16		+						
17		+						
18		+						

Chart of an experiment illustrating the determination of *Vibrion septique* infection in the mouse by calcium chloride

Turning now to the second group of inflammations, those due to bacteria, we find they are much less constant Whereas in the chemical and physical reactions the exciting agent can be measured and controlled, and the tissues react as regularly as any living substance can be expected to do, in this group the exciting agent and the host are subject to such biological variations that only by the study of a vast mass of material is it possible to reduce any particular infection to its fundamental characteristics An organism of normal virulence will produce

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* Lectures I and II appeared in THE LANCET last week. All the lesions described were illustrated by lantern slides

He recognises the possibility of mistaking the nature of these attacks when the doctor has only the patient's own experience to guide him

> "When a patient states that he loses consciousness for a brief moment—a few seconds—and immediately recovers, sometimes falling down, it may be surmised that his attack is due either to a temporary heart-block or petit mal If the patient is young the latter may be suspected, if in later life—over 40—the former"

It is interesting to read the experiences of former clinicians who recognised the phenomena present in heart-block, although they were ignorant of the nature of this condition Stokes and Adams recognised the epileptoid attacks associated with a slow pulse Hilton Fagge[12] (1888), in the chapter on minor epilepsy or petit mal, gave the following account of an attack which was evidently due to heart-block —

> "Some years ago while I was one day listening with the stethoscope to the heart of a man whom I have never seen before, its beats suddenly ceased I looked up and saw that his face had turned deadly pale He said that he was going to faint and reclined back on the chair from which he had risen I could feel no pulse at his wrist and for an instant I thought he might be going to die, but I had hardly time to ring my bell when the colour returned to his face and I found that his heart was beating again Presently there was a little twitching of the muscles in one or both hands In a minute or two he was able to tell me that he often had 'fainting fits' and that some years back he had been subject to epileptic seizures It appeared clear that the attack which I had witnessed was one of minor epilepsy"

It appears equally clear now that this was an attack of heart-block, and in all probability the previous "epileptic seizures" were of the same nature

Sir William Broadbent[13] (1897) wrote as follows on the symptoms of fatty degeneration of the heart —

> "The epileptiform attacks are not often violent but resemble petit mal rather than a typical epileptic fit, while, however, the convulsion may not be so severe there is profound unconsciousness—not like epileptic coma, but of a syncopal character—and the pulse may be extremely infrequent, sometimes less than 20 in the minute In my judgment the heart failure manifested by the slow pulse and the consequent arrest of the cerebral circulation are the cause of the fits, and it is not the epileptiform attack that affects the action of the heart By the time any of these forms of attack occur the diagnosis of fatty heart is usually sufficiently clear, but I have had under observation a case of very slow pulse with petit mal in which the strength and volume of the pulse and the degree of impulse of which the heart was capable precluded the idea of advanced degeneration"

The clinical observations of this physician—who was a great cardiologist and no mean neurologist—show clearly that he was dealing with attacks of heart-block with standstill of the ventricles and not with a condition of "fatty heart" or of petit mal

Although, as Mackenzie states, heart-block with syncopal or convulsive attacks is much more common after the age of 40, the possibility of its occurrence in early life must be kept in mind A good number of cases of congenital heart-block are now on record due to some defect in the interventricular septum Those patients are liable at times to attacks of giddiness and fainting In acute infective fevers, such as diphtheria, heart-block may develop, but any symptoms in these cases are not likely to be mistaken for those of petit mal as the patient is under close observation It is not so well known that heart-block accompanied by faints and fits may be an early sign of rheumatic infection I have recorded elsewhere[14] the following case —

> A schoolboy of 17 years was noticed by a brother at 3 A M. to have a fit The patient had just returned to bed after having risen to take a drink of water From 3 A M to 5 A M. he had a series of fainting turns, and at 5 A M another fit The doctor who attended the case found that numerous fainting turns occurred in which the patient turned pale but did not lose consciousness, he complained of feeling faint In the more severe attacks or "fits" he became pale, the legs and arms were fixed, and he lost consciousness, some twitching of the limbs and face occurred, he breathed deeply, the face became flushed, and he recovered consciousness The severe attacks occurred only occasionally until midday and then became more frequent After a severe attack there was usually vomiting or violent retching
>
> When I saw him at 2 P M the same day the boy was feeling tired and exhausted The pulse was at times steady and regular at 80 per minute, and at other times irregular with pauses of varying length These pauses were characterised by a feeling of faintness on the part of the patient During 20 minutes the pulse on two occasions was quite imperceptible and the ventricles ceased to beat for long intervals and each time a "fit" as described above occurred The periods of ventricular standstill were so prolonged that one wondered if the ventricle would ever resume beating

By observation of the heart and pulse during the faints and fits one was able to recognise that the condition was circulatory in origin and not epileptic Taking the attacks by themselves one could easily have adopted a diagnosis of epilepsy The underlying condition was apparently a toxic disturbance of the genetic system, due to acute rheumatic infection, and leading to heart-block of an intermittent character, and, as it proved, of a temporary nature.

Some Further Problems.

While in the case of bradycardia due to heart-block the attacks of syncope and convulsive movements can be understood easily as the result of cerebral anæmia from cessation of ventricular action, the exact conditions in connexion with paroxysmal tachycardia and auricular flutter are not so clear There is here no cessation of the circulation The heart continues to beat and, as a rule, regularly. The syncopal attack usually occurs at the onset of the new rhythm Many patients have similar attacks of tachycardia and yet never show any signs of fainting What special factor is it which determines a fainting attack in one patient and not in another, or in one attack and not in another? It may be suggested that there is more disturbance of the blood flow through the cavities of the heart at the onset of the new rhythm, and that this leads to a diminished supply of blood to the cerebrum Later the heart accommodates itself to the changed condition and more blood reaches the brain In many of these cases of tachycardia the auricles and ventricles are contracting at the same time—as graphic records show—and the refilling of the cardiac chambers during diastole must be a very partial process It may be that want of blood in the heart is the direct cause of want of blood in the brain In the case of auricular flutter Sir James Mackenzie considered that the weakness or absence of the pulse was due to the ventricle responding for a brief period to each auricular contraction It is clear that a heart beating at the rate of 200 to 250 per minute has very little driving power, as well as very little blood to expel A fainting attack under such conditions is easily understood, but experience has shown that similar attacks may occur when the heart-rate is not more than 180 per minute These problems require further study, and possibly closer observation of the circulatory conditions present at the onset of an attack may help their elucidation

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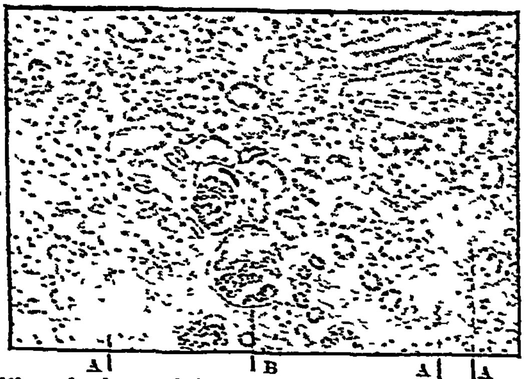
14 Arch of Disease in Childhood, February, 1926

But apart from theoretical considerations we must all be aware of direct observations which are incompatible with the view that immunity is concerned entirely with the circulating blood A patient severely ill with typhoid fever may have a high agglutinin content of his blood serum, while on the other hand, it is said that individuals who have acquired active immunity against such diseases as enteric fever, plague and cholera remain relatively resistant long after demonstrable antibodies have disappeared from the blood H D. Wright has recently published some extremely interesting observations bearing on this He shows that in immunised rabbits pneumococci rapidly and permanently disappear from the blood stream, but that the serum shows no constant increase of the usual antibodies. And many cases of subacute infective endocarditis exhibit a phenomenon which is not sufficiently appreciated (Figs 2 3 and 4) In these cases colossal numbers of organisms grow on the endocardium, actually in the blood stream, but should they become detached and carried to other parts of the body they seem unable to proliferate. This is especially well seen in the kidneys when emboli of microbes are caught up in the glomeruli for progressive lesions scarcely ever develop; the organisms which proliferate freely when bathed by the blood stream are killed off by the tissue cells and healing takes place with the minimal amount of scarring

I do not think, therefore, that we shall achieve our end if we limit our study to the blood But at the same time I do not suggest for one moment that antibodies are of no importance. The serological changes of immunity are obviously part of the profound alteration in the body as a whole which follows infection: there can be no two opinions about that; the only question that arises is how big a part do they play? For me at least, this question is still unanswered and is likely to remain unanswered until it is more generally recognised that the chemist and physicist have in immunology a fruitful field for their labours

FIG. 3



Section of a human kidney from the same case of subacute infective endocarditis shown in Fig 2 The section shows completely fibrosed glomeruli (A) and one partly fibrosed (B) There is some interstitial scarring

TISSUE REACTIONS AS A FACTOR IN IMMUNITY.

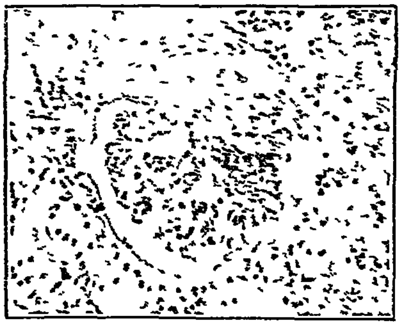
If on the other hand we devote ourselves to the study of tissue reactions what guarantee is there that we shall meet with success? There is very little I am afraid, to encourage us, for comparatively little work has been done in this direction. The work of Metchnikoff and his school has established the importance of the phagocyte, but this is scarcely the same thing Koch some 40 years ago, demonstrated that the tissues of the tuberculous guinea-pig react in a remarkable way to a second infection with tubercle bacilli, and more recently continental pathologists have devoted much attention to the analysis of primary and secondary tuberculosis in man. From this work it appears to be established that the almost universal primary tuberculosis of infancy or childhood is successfully overcome in the majority of people and that the characteristic lesions heal with a specific tissue reaction But this infection permanently modifies the tissues of the host and should a second infection occur in later life it is definitely different from the primary one both in the distribution and progress of the lesions and in their histology.

But experimental work in this direction has been relatively neglected, and I propose, therefore, to devote the rest of the time at my disposal to discussing the possibilities of this method of research

THE MECHANISM OF DEFENCE-RUPTURE.

As I have already said, we may enlarge the scope of our investigations by using animals which have been artificially rendered more immune, or more susceptible, to any particular organism. The latter method is the simpler, and it is the one with which I have chiefly worked We owe our knowledge of its possibilities to the investigations into the pathology of gas gangrene carried out by Bullock and Cramer in 1918 These authors found as others have done before them, that surface cultures or washed broth cultures, of *B welchii* are practically non-pathogenic to mice and guinea-pigs, though small quantities of whole broth culture produce a fatal gas gangrene in 24 hours They came to the conclusion that these animals are naturally immune to *B welchii*, and that if gas gangrene is to be produced there must be present, in addition to the host and the organism, a third or accessory factor. Clinical experience confirmed this impression, for while many wounds on the western front were infected with *B. welchii*, or harboured these bacilli, only a small percentage developed gas gangrene. On further investigation it was found that various substances among them being the ionisable calcium salts, are capable of determining infection if injected into animals along with the detoxicated organisms. The conclusion reached from an exhaustive series of experiments was that the calcium produces a local change in the tissues and the effect of this change is to bring about a local breaking down of the defensive mechanism against *B welchii* To the whole phenomenon they gave the name "defence-rupture" I have merely sketched out the general trend of this work; Gye and Cramer extended it in various directions, and their observations appear to me to open up a very important field of investigation. If this work means anything at all, it is that in infection the state of the tissues is of the first importance Normally we are able to cope with such pathogenic organisms as we happen to encounter but from time to time our defensive mechanism fails, and infection takes place There is evidence that this rupture may be due to some recognisable injury of the tissues but more often, I imagine, it is due to some more subtle change.

FIG 4



High power view of a glomerulus from the kidney illustrated in Fig 3 showing scarring following a streptococcal embolus.

Streptococcus and Calcium.

Bullock and Cramer, in the course of their work, investigated the defence-rupture phenomenon in streptococcal infections as a control to their in an individual of average susceptibility a fairly regular reaction, but any variations in virulence or susceptibility may so modify the inflammatory process as to cause the greatest confusion The histology of tuberculosis, for example, belongs to the elements of pathology, but under certain circumstances the tubercle bacillus causes lesions which may deceive the most experienced histologist Nevertheless, enough facts have already accumulated to encourage the pursuit of this line of investigation Indeed, the very fact that variations in infections are so common should be a further encouragement rather than the reverse, for very often the true understanding of the usual is best obtained from a study of the unusual A very large amount of work has already been done in the direction of modifying the infectious process, but the literature of the subject is so vast that no attempt at any kind of review can be made here.

Experimental Methods of Altering the Host's Reaction

Altering the virulence of the infecting organism amounts to increasing or diminishing the dose of the exciting agent, and is a most valuable experimental method employed by Pasteur in his pioneer work on chicken cholera and anthrax But it is in the behaviour of the host that the answer to the problem lies Two obvious methods of investigating the behaviour of the host in infection suggest themselves One is to break down the immunity to any particular organism of a non-susceptible animal, and then to determine what happens when we infect it with the organism in question; the other is to study what happens when we infect a susceptible animal which has been rendered artificially immune

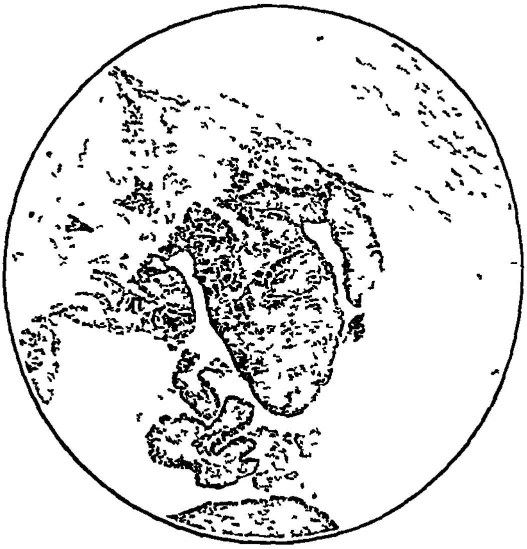
Immunity not Limited to the Body Fluids

Having successfully prepared our experimental animals we must next ask ourselves exactly what it is we are going to study The natural answer would be the blood of the animal, for by most people the study of immunity is limited to that of the body fluids. I do not wish to enter into the ancient controversy between the cellular and the humoral schools of immunity, a working compromise seems to have been arrived at between them and the humoralists have absorbed the wandering phagocyte into their fold But we are entitled to ask whether the blood contains and represents the whole of the defensive mechanism of the individual Is it only a vehicle of inconstant composition, or does it really represent the concentrated essence of the tissues, and can we comprehend the whole process of infection from a study of the blood alone? Except in the rarest instances infection of the blood stream is a purely laboratory phenomenon Infection concerns the tissues first and the blood only secondarily, and it may be that the importance of the blood in immunity has been overrated We are all familiar with the serological phenomena of immunity. Immunisation is undoubtedly accompanied by the appearance of various antibodies in the body fluids, but are these serological changes really a measure of immunity or are they merely a concomitant of it? Further, does the antibody content of the blood serum represent with exactitude the antibody content of the tissue lymph? And does this, in turn, vary in composition according to the powers of resistance possessed by the cell itself?

Modern immunology rests on the tacit assumption that the antibodies of the blood do, in fact, serve as a qualitative and quantitative measure of the state of immunity of the body as a whole If one considers this assumption critically, it is difficult either to prove or disprove it The process of infection is concerned with so many variables that even the most carefully devised experiments are more than likely to give ambiguous results. And the whole trend of work in this subject has for so long been concentrated on the antibodies of the blood that it seems almost presumptuous to doubt their importance. Nevertheless, the tissue cell must be the ultimate source of the protective constituents of the serum

In the immunity produced to toxins we know that the specific antitoxin circulates in the blood and that the immune blood can confer passive immunity if injected into another individual But this is not the whole story Romer showed many years ago that a local immunity to abrin could be developed in the rabbit's conjunctiva without any concomitant development of antitoxin in the serum or in other tissues Again, in the phenomenon of anaphylaxis it has been clearly demonstrated that the site of the reaction is in the cells of the body. Now, just as it is possible to produce passive immunity to toxins, so it is possible to produce passive anaphylaxis, but the animal receiving the sensitised serum only becomes hypersensitive after a certain interval of time The mere drenching of the tissues with a sensitised serum is not sufficient to render an animal anaphylactic; there must be time for the serum to bring about a definite change in the tissue cells

FIG. 2

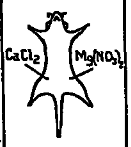


Section of vegetation on the heart valve in a case of subacute infective endocarditis showing black masses of streptococci

One of the most useful diagnostic methods given to us by immunology is the Wassermann reaction This, as you know, is a logical extension of the Bordet-Gengou phenomenon It was not arrived at by chance but was based on the reasoned application of immunological facts How disappointing is it, therefore, to find that there is really no rational basis for the Wassermann reaction at all It is, indeed, as empirical as any procedure of clinical medicine, and I think one may be permitted a doubt as to the validity of the immunological teaching on which it rested

Another immunological test which has certain anomalous features is the opsonic index This was chiefly established by observations on the serum of patients suffering from tuberculosis and staphylococcal infections The method depends, of course, on the estimation of the phagocytosis by polynuclear leucocytes of organisms which have been exposed to serum Now the polynuclear leucocyte plays a predominant part in staphylococcal infections, but it appears to have no importance at all in the ordinary tuberculous lesion Are we justified in using as our indicator of immunity a cell which plays no part in the progress of the disease in the body? Can the same indicator be of equal value in two such diverse infections? One does not doubt the accuracy of the opsonic index any more than one doubts the accuracy of the Wassermann reaction, but it is permissible to question the validity of the assumption on which it rests are inoculated into the subcutaneous tissues of the mouse an acute abscess forms in a few hours and remains more or less localised The inoculum becomes invaded with polynuclear leucocytes which phagocytose bacilli with great readiness Many of the leucocytes are so packed with bacilli that their nuclei are quite obscured In course of time the centre of the abscess breaks down and bacilli may proliferate in this necrotic zone to some extent But the inflammatory process does not spread, the organisms are eventually destroyed, and healing takes place in the usual way If calcium chloride is inoculated along with bacilli a very different result is obtained I have never seen lesions so extensive as can be produced with streptococci but the diphtheria-calcium lesions are, as a rule, very much larger than the pure diphtheria lesions Further, they differ histologically The initial œdema appears to be even more important to the diphtheria bacillus than to the streptococcus, for the bacilli proliferate enormously and, although leucocytic emigration is pronounced, yet the resulting abscess is never strictly localised Zones of leucocytes packed with bacilli occur, but a fibrinous exudate tends to persist, on the surface of which bacilli proliferate abundantly Indeed, making allowances for the fact that we are dealing with a more or less solid tissue instead of a mucous surface, the whole lesion is strongly reminiscent of the human diphtheritic membrane (Fig 7) It is possible that more toxins are liberated by the diphtheria bacilli than by the streptococci, but we have not, as yet, observed anything which could be called a general toxæmia In our experience, the virulence of the strain of streptococcus employed is not of predominant importance, but different types of diphtheria bacilli do appear to act in different ways Some give rise to much more pronounced lesions in mice than others, and the reaction is not so profoundly modified by the calcium At the same time the importance of a fairly large dose of calcium becomes apparent when dealing with less virulent strains

FIG 6

	MAY 10	11	12	13	14	15
1				–	+	o
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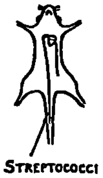
5				–	o	o
6				–	o	o
7				–	o	o
8				–	++++	o
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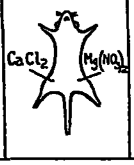
10				–	+++	o
11				–	++	o
12				–	++	o
13				–	o	o
14				–	o	o

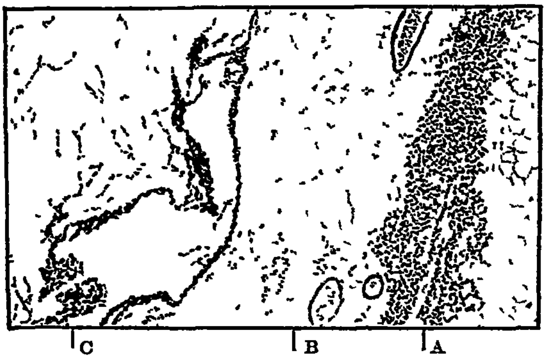
Chart of an experiment showing the determination of streptococci from the blood into early calcium lesions

I do not think it would be justifiable to discuss these experiments in any greater detail at present As you may imagine, even in these preliminary investigations all sorts of interesting suggestions have arisen, and until they have been put to the proof, it would be very unwise to theorise further But I feel sure that the work along these lines must eventually throw valuable light on the process of infection

TUBERCULOSIS AND SILICA MINERS' PHTHISIS

It is quite impossible to be interested in infection without turning one's attention sooner or later to tuberculosis, and, from our point of view, this disease is of peculiar importance It is generally recognised that most of the inhabitants of civilised countries are infected with the tubercle bacillus at some period of their lives, and that most of these infections are successfully overcome, indeed, considering the ubiquity of the tubercle bacillus its pathogenicity is remarkably low Nevertheless, a considerable number of people do die of tuberculosis every year, and this can only happen if there is some modification of what we may call the average infection For the most part we have no conception of the nature of this modification, but the study of industrial diseases reveals one important contributory factor It is well known that individuals who are exposed to dusts containing silica are liable to develop chronic pulmonary fibrosis, and are peculiarly prone to pulmonary tuberculosis, and in the gold-mining industry of South Africa the incidence of this so-called miners' phthisis has been so high as to necessitate a special organisation to deal with it But though it is agreed that silica aids the development of the tubercle bacillus in the human body its mode of action is not definitely known It would take too long to discuss the pathology of miners' phthisis in detail, but we may take it as accepted that silica is a protoplasmic poison, and that when it comes into contact with the tissues it slowly changes into a soluble form and produces its effect by chemical not physical means Fibrosis alone, however, can scarcely render a lung hypersusceptible to the tubercle bacillus, there must be something more in the accessory action of the silica than this Trying to elucidate this matter Dr W E Gye and I compared the lesions produced by inoculating tubercle bacilli together with silica into the subcutaneous tissue of mice with those produced by inoculating the bacilli alone We found that if we added silica to our inoculum the bacilli proliferated enormously in the centre of the necrotic zone, whereas without the silica the organisms remained practically quiescent and gave rise to scarcely any tissue reaction It seemed obvious that this bacterial growth might be due to three possibilities (1) the coagulum might protect the organisms mechanically during the early days of their lodgment in the body, (2) the disintegrated cells might furnish an unusually favourable pabulum, (3) the silica might act as a direct stimulus to the growth of the bacilli In the first two possibilities the silica would act simply by causing necrosis of tissue, but in the third it would act specifically on the bacillus rather than on the host. To test this matter further, I used the technique of the fixation abscess In this method a silica lesion is produced in one flank of a rabbit or mouse, and in the other flank an abscess is brought about by some such agent as calcium or turpentine The animals are then inoculated intravenously with tubercle bacilli, and the lesions are examined in a fortnight or three weeks' time for the presence of the organisms I have found that whereas tubercle bacilli are almost invariably

FIG 7

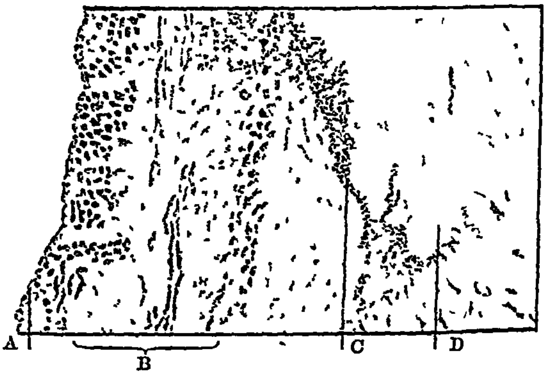


Diphtheritic inflammation in the mouse 67 hours after the subcutaneous injection of diphtheria bacilli and calcium chloride A, External leucocytic zone B, Semi necrotic subcutaneous tissue C, Necrotic zone showing masses of diphtheria bacilli observations on gas gangrene I have repeated some of their experiments and can fully confirm their results.

I have used several strains of streptococci, including one isolated from a normal throat, one from a case of puerperal sepsis, and one from a fatal case of cellulitis and have found them all practically non-pathogenic for the mouse Injected into the subcutaneous tissue they produce a small abscess which remains localised and disappears in three or four days, leaving nothing but a microscopic scar If, on the other hand, calcium chloride is added to the suspension of streptococci a very extensive spreading abscess is produced which invades the body wall and causes ulceration of the skin And whereas streptococci inoculated alone into the subcutaneous tissue of the mouse appear to remain entirely localised, if they are inoculated together with calcium they pass beyond the bounds of the local lesion, for, in several cases, I have recovered them from the heart blood, although I have not succeeded in doing this when they have been inoculated without the calcium At the same time the absolute pathogenicity of the streptococcus is not apparently increased by the calcium, for mice remain healthy with very extensive lesions for periods of a week or even longer What are the essential differences in this reaction? In both the introduction of the streptococcus causes an acute inflammatory reaction, with a profound exudation of polynuclear leucocytes and proliferation of the fixed connective tissue cells But in the streptococcal-calcium lesions the organisms proliferate to a very much greater extent than they do in the pure streptococcal lesions And this does not appear to be due to diminished phagocytosis, for in the calcium reaction there is as abundant an emigration of leucocytes as in the pure streptococcal reaction, and these leucocytes are just as actively phagocytic It would seem rather that the streptococci do not find a favourable medium for their growth in the normal tissue fluids of the mouse In the pure streptococcal lesion the centre of the abscess is necrotic and contains large numbers of cocci But these cocci do not undergo progressive proliferation to any extent; in fact, they appear to die and disintegrate within a few days, for I have tried more than once to produce an exaggerated lesion by inoculating calcium into the flanks of mice bearing streptococcal abscesses at varying times after infection but without success It would seem that the vitality of the organisms in these healing abscesses is rapidly lost In the calcium lesions, on the other hand, the cocci take full advantage of the intense œdema produced by the metal and undergo a remarkable progressive proliferation It is commonly stated that, in acute infections which are being successfully resisted the invading organisms are shut off from the rest of the body by a zone or wall of leucocytes But I am rather inclined to think that this is more apparent than real, for I have repeatedly observed in pure streptococcal lesions diffuse inflammatory foci in which the margins are quite undefined, though it is certain that such lesions are not developing ones Possibly the plugging of the peculiarly large lymphatics of the subcutaneous tissue of the mouse with masses of leucocytes has been mistaken for incapsulation, at any rate, I have seen this kind of thing in the streptococcal-calcium lesions in conjunction with the diffuse cellulitis which is characteristic of this reaction, and, in passing, I may point out that the streptococcal-calcium lesions bear a most striking resemblance to the pure streptococcal cellulitis occurring in the human being (Fig. 5)

I do not think that by simple histological work we shall be able to determine exactly how the calcium modifies the streptococcal infection, the changes are rather too subtle to be appreciated And I have, in conjunction with my colleague, Dr John Mills, endeavoured to throw some light on this question by modifying the experimental conditions in various ways I need not labour the point that the possibilities of experimental error in this kind of work are very considerable, so many factors are capable of accidental variation that each experiment must be repeated many times before one can place very great reliance on the results obtained Our work is really only in its infancy and, therefore, our conclusions are purely tentative There is evidence to show that the actual amount of calcium trauma is a more important factor than the number of infecting organisms introduced or the virulence of the strain used. I have obtained, as a general rule, far more pronounced defence-rupture with larger doses of calcium than with smaller doses, with 10 mg than with 5 mg. And this result does not seem to be due simply to an exaggeration of the initial calcium lesion, it is not, as it were, an expression of the simple addition of the two lesions, because the initial calcium effect would be entirely lost in the massive end-result But it would appear that the more abundant œdema produced by the larger dose of calcium permits of the proliferation of the cocci in situ which determines the severity of the resulting infection Again, the defence-rupture phenomenon occurs, in our experience, more readily in the earlier than in the later stages of calcium poisoning This is illustrated by the following experiment, and is, indeed, in agreement with certain observations made by Bullock and Cramer in their work on gas gangrene (Fig 6). Of 14 mice, 7 were inoculated on one day with calcium into the right flank and magnesium nitrate (which is incapable of producing defence-rupture) into the left flank The next day the other seven mice received similar inoculations, and the following day the whole 14 animals were inoculated into the tail veins with streptococcal suspension The animals were killed at intervals of three or four days, when it was found that, in the first seven, with one slight exception, the only difference observable in the two flanks was obviously due to a pure calcium effect; whereas, in the second seven, three exhibited very pronounced spreading abscesses in the calcium flanks, though nothing of the kind was present in the magnesium flanks, and in two others the same difference was noted, though in a minor degree

FIG 5



Streptococcal cellulitis in the mouse 72 hours after subcutaneous injection of streptococci and calcium chloride A, peritoneal surface B, Muscle of abdominal wall C, Spreading leucocytic zone at the margin of the lesion D, Area of tissue necrosis

Diphtheria-Calcium Lesions

It is possible that the extensive proliferation of the cocci in the early calcium coagulum may permit of the elaboration of a sufficient amount of soluble toxic to modify the infective process; and we, therefore, determined to repeat some of these experiments, using diphtheria bacilli instead of streptococci It is usually stated that the diphtheria bacillus is non-pathogenic to mice and I may say at once that we have not yet succeeded in killing mice with them But at the same time the local reaction produced by this organism is quite as extensive as that produced by the streptococcus If washed diphtheria bacilli

1 The *normal* as stated above, in which the acid curve shows a simple rise and fall, the peak of the curve denoting the point of time at which relaxation of the sphincter occurs

2 *Hypertension or spasm of the sphincter*, in which it acts in the normal fashion in the early stages of digestion, but fails to relax at the appointed time, so that neutralisation does not occur, and the acid curve either maintains its level or continues to rise This is the functional disturbance of the stomach known as hyperchlorhydria, the commonest of all gastric disorders, in which the symptoms appear in the later stages of digestion when the pylorus refuses to relax Several types of this condition exist, according to the action of the pylorus

3 *Excessive relaxation of the pylorus*, in which relaxation occurs from the beginning of digestion, regurgitation and neutralisation commence at once, bile is usually present in the gastric contents, and the condition of achlorhydria is established

At first sight this explanation of sphincter action does not appear to satisfy all demands, for if the pylorus relaxes excessively as in the third condition the stomach might be expected to empty more rapidly than normal, which is, however, not necessarily the case A difficulty is also presented by the class of case in which the stomach empties rapidly and yet neutralisation fails to occur The explanation of these anomalies will be given later

Movements of the Duodenal Contents

To understand precisely the action of the pyloric sphincter is without a doubt the first step in the elucidation of functional disorders of the stomach. The acidity of the gastric contents is quite a secondary consideration, and so long as the sphincter acts normally the amount of gastric juice secreted is of little moment It is thus of first importance that the exact movements of the duodenal contents and the part played by the pylorus in the process of their regurgitation into the stomach should be clearly explained For this purpose a series of 100 cases has been studied and four distinct movements have been observed

1 Contraction of the cap (first part of duodenum)

2 Peristaltic contraction of the duodenum (other than the cap), propelling the contents forwards

3 Contraction of the duodenum (other than the cap), forcing the contents backwards, presumably antiperistalsis

4 Segmentation or mixing movements

These movements have been observed in normal cases, and also in such conditions as gastric ulcer, duodenal ulcer, gall-stones, new growth of stomach, gastro-enterostomy with patent pylorus, appendicitis, and pyloric stenosis

Of these four movements we are in this paper chiefly concerned with antiperistalsis *Antiperistalsis* was observed in 93 per cent of the cases, and is evidenced by swaying or regurgitant movements backwards towards the pylorus It appears to be due to actual contraction of the duodenum and is just like peristalsis, but in the opposite direction The cap contracts and passes the food into the second, and sometimes, the third part, of the duodenum. An antiperistaltic wave is initiated, and sways the food back like a pendulum for varying distances; it often passes back into the cap, which it may distend, and is then held up by the pyloric sphincter, or it may fall short of this point A peristaltic wave propels it onwards again and an antiperistaltic wave returns it If food has in the meantime left the stomach the two portions mix together. There is no rule as to how many times the food mass may thus swing backwards and forwards, the first peristaltic wave may drive it into the jejunum or it may take several waves to force it into this part, but once in the jejunum it does not appear to return to the duodenum The most active antiperistaltic movements occur in the second part, but the food mass may swing back from any part of the duodenum. It may be temporarily held up at the duodeno-jejunal flexure, but not more often than at any other point, and there is no visible evidence of a definite sphincter action at this position In every case the cap is periodically filled or partially filled by antiperistalsis of the duodenum, and the only barrier to regurgitation into the stomach is the pyloric sphincter These movements go on until the stomach is empty, they become less evident as the stomach empties, although at this stage the food tends to be held up for a longer time in the duodenum The peristaltic and antiperistaltic movements apparently occur independently of each other or of the gastric movements They may occur alternately, with a regular rhythm for a time, or quite irregularly This swaying movement must be a more efficient mixing agent than the segmentation movements

Regurgitation into the Stomach

Regurgitation into the stomach was directly observed in six cases only, and this small percentage is no doubt due to the difficulty in detecting the opaque emulsion passing back through the narrow pylorus We are therefore not in a position to speak more positively than as follows Regurgitation only occurs now and then, and certainly not with every antiperistaltic wave This agrees with the fact that the neutralisation is not a rapid process, as shown by the relatively slow descent of the acid curve When regurgitation was observed there was no doubt whatever that the pylorus was relaxed between the gastric peristaltic waves, because the food was seen to pass right back into the stomach through the cap, owing to the impetus imparted to it by the second part of the duodenum Regurgitation into the stomach would no doubt always occur when food regurgitated into the cap, if the pylorus was relaxed at the moment, and provided also that the reflux was not prevented by a peristaltic wave of the stomach So far as these observations go at present there can be no doubt that this is the case The most reasonable hypothesis to advance is that the pylorus commences to relax independently of the gastric peristaltic waves as digestion proceeds, and regurgitation occurs from time to time When the stomach is empty it is well known that the pylorus is relaxed independently of gastric peristalsis, and this relaxation no doubt normally begins before the stomach is empty The conditions in the duodenum are favourable to regurgitation and, if the pylorus relaxes, it is merely a question of difference of pressure in the duodenum and stomach. Marbaix [8] many years ago registered a duodenal pressure of 10 cm. to 15 cm water, and Payne and Poulton [9] in a normal person found the mean pressure to be 14 cm. with rises to 18 to 20 cm With a relaxed pylorus these pressures are quite sufficient to overcome the mean intragastric pressure which is commonly below 10 cm. water, but, since with a peristaltic contraction of the stomach the pressure in the pyloric end rises to 20 cm or 30 cm. water or even higher, regurgitation from the duodenum would be impossible at such a moment

In the present state of our knowledge we must conclude that when the stomach is filled with food the pyloric sphincter assumes its postural tonus and relaxes only before gastric peristaltic waves, when the stomach has emptied to a certain point the sphincter commences to relax also between the peristaltic waves and pyloric regurgitation occurs from time to time, when the stomach is empty the pyloric tonus is low and the pylorus remains open for many minutes at a time, allowing free regurgitation of intestinal fluids A certain amount of leakage no doubt occurs in some cases even in the early stages of digestion, as now and then the curve of inorganic chlorides rises to a certain extent, and we have observed regurgitation within a quarter of an hour after taking food

The pyloric sphincter has thus the two functions of regulating (1) the output of the stomach, and (2) the regurgitation of the duodenal contents The latter is the principle recognised some years ago by Boldyreff from animal experiments These two functions are both disordered together in pyloric hypertension or spasm, when retention of food occurs along with deficiency in the neutralisation of the gastric contents Relaxation of the pylorus between gastric present in large numbers in the silica lesions, they only occur in small numbers in the control lesions, and this, in spite of the fact that the necrosis produced by calcium and turpentine is much more extensive than that caused by silica Simple necrosis of tissue, therefore, is not the explanation

The possibility that silica is a direct stimulus to the growth of the tubercle bacillus may be studied in vitro, and I have made many attempts to enrich culture media by adding various quantities of silica to them, but my results have been too inconclusive to be of much value Similarly I have tried to alter the development of an artificial miliary tuberculosis by treating animals with silica before inoculating them intravenously with bacilli Inasmuch as the same cells, the reticulo-endothelial cells, phagocytose both silica and tubercle bacilli, I thought it possible that if I gave my rabbits a preliminary course of silica intravenously they might react differently when infected with tubercle bacilli by the same route But here again my results have been inconclusive In some animals the silica appeared to cause a pronounced exaggeration of the infection, but in others it seemed to cause exactly the reverse It may be that the preliminary treatment with silica has to be very *carefully adjusted* Too much silica may so poison the cells as to interfere with their phagocytosis of the bacilli, and this is a point which I am investigating at present

As the matter now stands, therefore, we cannot claim that we understand exactly how silica acts in increasing the susceptibility of the tissues to infection with the tubercle bacillus But that it actually does so is beyond all doubt, and in miners' phthisis we have an infection in which the influence of a third or accessory factor is clearly manifest

Conclusion

In conclusion I would suggest to you that inflammation is not a stereotyped process or sequence of changes which occurs in the tissues in response to irritation, but that it is a variable phenomenon which alters its characters according to type of stimulus which calls it forth Different irritants produce different results, and it should be possible to distinguish the nature of the irritant from the type of the reaction And since microbic infection necessarily implies inflammation, it should be possible for us to recognise different types of inflammation corresponding to different groups of pathogenic organisms This being so, it seems highly probable a closer study of microbic inflammation will reveal specific tissue changes which may be of significance in the attempt to combat these infections If we understand exactly why particular bacteria make good their footing in the tissues, and how the tissues respond to their presence, it may be possible for us to devise logical methods of modifying or combating infection It is, at any rate, a line of inquiry which I commend to your notice as having interesting possibilities

I should like to express my indebtedness to my laboratory assistants, Mr Armstrong and Mr Napper, for much invaluable help in the preparation of the material for these lectures

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Bristol's Crippled Children—It has been decided to amalgamate the Orthopædic Hospital and Home for Crippled Children of 36 beds, at Redland, and the Bristol Crippled Children's Society A site has been obtained for a new building to provide ample facilities for open-air treatment

Hospitals Contributory Scheme for Birmingham—For some time past the desirability of establishing a contributory scheme has been under consideration at Birmingham The city's hospitals council recently unanimously approved the scheme and it has now been accepted by the Board of Delegates of the Birmingham Hospital Saturday Fund, the organisation of which will continue to be utilised This step is a necessary accompaniment of the pending reorganisation of the hospital service of Birmingham which at present provides a number of beds not only inadequate to the needs of the district but smaller in proportion to the population than in some other great towns

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ANTIPERISTALSIS OF THE DUODENUM

AND ITS RELATION TO PYLORIC REGURGITATION

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Antiperistalsis has not yet been demonstrated to occur as a normal event in any portion of the alimentary canal in man, although it is assumed to occur in the ascending colon from the X ray observations of Cannon [1] and the experimental work of Elliott and Barclay-Smith on various animals [2] The mixing of the food with the bile and pancreatic juice in the duodenum is supposed to be accomplished by segmentation movements after the fashion of the small intestine, and Cannon,[3] describing these duodenal movements in the cat, says that "the to-and-fro movements of the particles may be a relatively extensive and very energetic swinging" Starling, speaking of intestinal segmentation movements, says that "these movements have not a translatory effect, and a column of food may remain at the same level in the gut for a considerable time "[4] Cannon makes no mention of antiperistalsis, and it has not apparently been recorded It appears to us, however, that no other force than that derived from antiperistalsis will explain the movements we describe in the duodenum in this paper The peristaltic movements of the duodenum are very energetic and, if the onward movement of the food is due to them, the same and equally energetic movement backwards may be reasonably assumed to be due to antiperistalsis The study of the movements of the duodenum by the X ray method is more difficult than that of the stomach , and perhaps this is the reason why no important information has been added to the subject since Cole [5] described the duodenal cap He regarded the first part of duodenum as being really a part of the stomach and as acting as a more or less passive reservoir, which receives the gastric contents expelled through the pyloric sphincter, and from which these contents are abstracted by the peristalsis of the second part of the duodenum It is difficult to understand such a method of emptying the cap, and at the present time the generally accepted explanation is that the cap contracts and discharges its contents into the second part of the duodenum The food is then described as passing rapidly through the second and third parts of the duodenum by propulsive peristalsis, being only momentarily delayed whilst it is broken up and mixed by segmentation movements No delay occurs at the duodeno-jejunal flexure and the food passes directly into the jejunum , slight backflow has been described as occasionally occurring from the third to the second part of the duodenum If these are the normal movements of the duodenum it is impossible to understand how duodenal regurgitation into the stomach can occur It was, however, shown by Bolton and Goodhart [6] that regurgitation of duodenal contents into the stomach is a normal event regularly occurring at a definite time, varying in different persons, towards the end of gastric digestion This regurgitation of alkaline material occurs when the curve of HCl acidity of the gastric contents has risen to an approximate height of 0 2 per cent , and the latter are neutralised, the process being usually completed before the stomach is empty This regurgitation they regarded as being entirely dependent upon relaxation of the pyloric sphincter when the acidity has attained its average normal height The acid curve thus imparts information as to the condition of the pyloric sphincter, and this is practically its only value in diagnosis

Action of the Pyloric Sphincter

It was shown that three conditions of sphincter action exist [7]

We opened a little abscess as before We examined the liver very carefully and found two more areas where fluctuation was present and dealt with these similarly They were quite small and all to the right of the falciform ligament and on the anterior surface The left lobe was normal We removed the gauze from the first abscess and led drains down into the abscess cavities, turning up the omentum to the anterior edge of the liver and stitching its free edge to the falciform ligament and parietal peritoneum in such a way as to act as a barrier between the affected area and the general peritoneal cavity The two drains were brought out through stab openings at either side of the original wound, which was completely closed

The patient's cardiac and general condition improved at once, but he was very restless and for some nights delirious His temperature went up for some days to 101° F He then further improved, the delirium stopped, but the restlessness continued Fourteen days after the operation he attempted to get out of bed and his wound, which appeared to have healed, burst open right down to the peritoneum It was sewn up at once with silkworm-gut under general anæsthesia He subsequently stayed quiet, the wound healed rapidly, and he left the hospital a few weeks later

Bacteriological examination of the pus in this case also showed the infective agent to be *Staphylococcus aureus*

The causes of hepatic abscess, as given in a standard text-book of surgery, are, besides trauma and tropical abscess, "*pyogenic infection of the biliary passages or any infective lesion in the territory of the portal vein, such as appendicitis, typhoid fever, or actinomycosis of the cæcum*" Colitis is also mentioned, and some text-books lay stress on the importance of the suppurative pile We have seen, at autopsy, an enormous liver abscess due to *Streptococcus hæmolyticus*, in which the primary focus was an abscess of the lung following pneumonia, infection having reached the liver by direct extension of pus through the diaphragm

In both our cases a careful general examination, paying particular attention to the rectum, was subsequently made to discover the source of infection of the liver, but none was found From the practical point of view, whilst these cases are, of course, very rare, it is obvious that they will not be recognised unless the possibility of their occurrence is borne in mind In the two cases described the symptoms were those of the acute abdomen; in one case the symptoms resembled those of a perforated duodenal ulcer, and in the other they pointed to a suppurative cholecystitis But a study of them failed to furnish anything which would enable us to recognise a given case as being one of acute localised hepatic abscess The operative diagnosis was made, during operation, on (1) omental adhesions, (2) localised swelling of normal-looking liver with underlying fluctuation, (3) the results obtained with the trocar and cannula In Case 2 there was a white plaque on the peritoneal surface of the liver over one of the abscesses The diagnosis in Case 2 was made, practically speaking, by means of the trocar and cannula

The treatment adopted in these cases calls for no comment We cannot dogmatise from two cases about prognosis, but Case 2 proves that even a severe case may recover

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The late Mr W E Bennett—At the age of 62 Mr William Edward Bennett died on June 4th at his home at Keresley, near Coventry He was a son of the late Mr William Bennett, who built the Royal Opera House, Coventry Studying medicine at the Universities of Birmingham and Paris and at St Bartholomew's Hospital, he qualified as L R C P Lond in 1890, became F R C S Eng in 1895, and graduated as M B at Birmingham in 1902 Before embarking on surgical practice he gained much experience as resident officer at the Queen's Hospital, the General Hospital, and the Jaffray Hospital at Birmingham Many years ago he began to specialise in orthopædic surgery, and at the time of his death was senior honorary surgeon to the Royal Orthopædic and Spinal Hospital, Birmingham He had also been for 21 years surgeon to the Coventry and Warwickshire Hospital, and was honorary demonstrator in anatomy in the University of Birmingham During the late war Mr Bennett held a commission in the Royal Warwickshire Regiment T D, and was visiting surgeon to the 1st Birmingham War Hospital.

AN OUTBREAK OF PARATYPHOID "B" FEVER CONVEYED BY ICE-CREAM

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With a Clinical Report by G L LEGGAT, M B, Ch.B Edin, D P H,
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An outbreak of paratyphoid B fever with 63 diagnosed cases occurred in the city of Norwich, beginning in the month of June, 1926 Its investigation produced some points of interest and the literature concerning ice-cream and paratyphoid fever is not extensive.

The records for enteric fever of the last few years showed, in the summary, in—

	Cases in the first six months	Cases in the second six months
1924	2	9
1925	4	10
1926	10	—

With these figures under consideration on June 30th the possibility of an outbreak was foreseen

Of the latter ten cases the last two are of interest here One, a para B case, was notified from the northern outlying part of the city, with an onset on May 22nd and the origin was untraced, though the usual possibilities (shell-fish, &c) were present As this case occurred nearly three weeks before the outbreak in an entirely different part of the city with no traceable connexion with the outbreak, it is not classed among the 63 cases, but as a sporadic case The other of the two, a case of para B fever, was the first case (S W) of this outbreak, a boy of 11 years with an onset about June 10th

The Outbreak

On June 29th two girls (G T. and A B) were suspected to be suffering from enteric fever This was subsequently confirmed by Widal reactions as para B and their onsets were on June 24th

One of these (A B) was a case of considerable importance The first Widal, taken a little early, was negative; she was very constipated, she had been away to the seaside for three weeks, returning to Norwich on Saturday, June 19th, and there was a certain amount of influenza about She was, therefore, at first considered not to be a case of enteric fever However, a confirmatory Widal was done later, which was positive to paratyphoid B, and she also developed some typical spots Therefore, if she received her infection in Norwich, which was extremely probable, it must have been between her return to Norwich on the 19th and her onset on the 24th Later inquiries showed that on her return to Norwich she had an ice-cream from the infecting source on the 19th, on her way from the station to her home. This fixed her incubation period at five days very accurately On the 30th several cases of an uncertain nature were reported to me and Widal specimens were taken on the appropriate dates These proved to be practically all positive A circular letter was sent to the practitioners of the city calling attention to the outbreak

Notifications were received as under Week ending June 26th, 1; July 3rd, 1; 10th, 25, 17th, 14, 24th, 12; 31st, 7; August 7th, 1; 14th, 2

All the cases were confirmed by positive Widal tests by Dr G P C Claridge, who used living cultures, and throughout this outbreak took as his standard a dilution of 1 in 40 with a time limit of two hours The disease in most cases was very mild, so that it is very likely that there have been some missed cases In fact, some were discovered by accident at the school clinic late in the disease, the diagnosis being confirmed by a Widal test There were no deaths peristaltic waves may occur from the beginning of digestion, giving rise to the presence of bile in the stomach and achlorhydria, whilst the function of controlling the output of food remains normal and the stomach does not empty at an abnormal rate Here is the explanation of the anomaly mentioned at the beginning of this paper that excessive regurgitation my occur, although the stomach does not empty more rapidly than normal The second anomaly—namely, that the stomach may empty very rapidly and yet the acid curve continue to climb and the contents remain unneutralised—also receives an explanation, for, although the pylorus may be of low tone, yet when the stomach empties very rapidly the duodenal conditions are unfavourable to regurgitation, owing to the rapid rush of the food through the duodenum

Summary

1 Antiperistalsis is a normal movement of the duodenum Its effects are to delay the food in the duodenum, to ensure its admixture with the digestive juices, and to produce conditions favourable to regurgitation into the stomach

2 The duodenal cap is filled periodically from the duodenum, the pyloric sphincter preventing regurgitation into the stomach

3 In addition to its function of regulating the output from the stomach the pyloric sphincter prevents regurgitation from the duodenum in the early stages of digestion, as digestion proceeds it commences to relax independently of gastric peristalsis, promotes regurgitation, and thus regulates the acidity of the gastric contents

4 An actual swing back of food from the second part of the duodenum is not always necessary to produce regurgitation, since a full cap with a momentary relaxation of the pylorus will produce it as we have observed

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TWO CASES OF
ACUTE HEPATIC ABSCESS TREATED BY OPERATION.

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THE two following cases were met with at the Meath Hospital and County Dublin Infirmary within a few months of each other —

CASE 1 —A boy, aged 12, with a well-nourished and well-developed body, was admitted complaining of sharp, severe pain in the upper abdomen, which had come on suddenly a few hours before It hurt him to move about in bed or to breathe deeply or to cough His pulse was 100, his temperature 99° F His bowels had moved on the previous day and he had not vomited For a fortnight before the night of admission he had had occasional vague pain in the belly but he had taken little notice of it and had not gone to bed

On *examination* his abdomen was found to be rigid and immobile, especially in its upper part, there was marked tenderness about the umbilical region The tongue was furred, the pulse fairly good, and the lungs normal Generally speaking, the case was not unlike one of perforated duodenal ulcer.

At *operation* the omentum was found adherent to the duodenum and liver Its free edge had turned upwards and was wedged between, and adherent to, these organs It seemed at first that a perforated duodenal ulcer had been sealed over by the omentum, but on separating the omentum from the duodenum, which was easily done, it was found that the duodenum was intact and quite healthy We then proceeded to separate the omentum which was still adherent to the liver, and were surprised to see a bead of pus oozing from the surface of the liver which had been covered by omentum The pus was wiped away and in the liver we saw a small hole with necrotic edges, on pressing near this hole more pus came out A closed artery forceps was passed in through the hole, its blades were gently opened, and the pus came out freely The abscess cavity was about three-quarters of an inch deep by half an inch wide It was on the inferior surface of the liver close to the anterior edge and in the left lobe The liver immediately around the abscess seemed to be in every way normal

A soft rubber tube was passed into the cavity The omentum was first twisted round the tube and then the tube was brought out through a hole in the omentum, a point or two of fine catgut being employed to keep the omentum in place The tube was brought out through a stab wound 1 inch to the left of the middle line The abdominal wound was closed in the usual way Convalescence was uneventful Pus discharged through the wound for four or five days, the laparotomy wound healed by first intention, and the boy left hospital quite well in three weeks Microscopic and cultural examinations of the pus showed the presence of *Staphylococcus aureus*

It was fortunate that this was our first case of the kind The adhesion of the omentum to the liver led us straight to the trouble, and operative diagnosis was easy to establish We were able to recognise the lesion in the second case only because we had the first one fresh in our minds

CASE 2 —A man, aged 29, was admitted to the Meath Hospital at midday He was very cold, with a subnormal temperature and an all but imperceptible pulse, his face was yellow, pinched, and haggard, his lips were blue He was able to give very little account of himself, but stated for the last 24 hours he had severe continuous pain in the right hypochondrium He had vomited any food he had eaten, his bowels had moved That morning the pain had become intolerable and he came to hospital He had not been feeling well during the previous week

On *examination* the abdomen was found rigid and immobile especially in its upper part, and there was marked tenderness over the gall-bladder area The lungs and urine were normal He was diagnosed as suffering from an acute abdominal complaint, probably suppurative or gangrenous cholecystitis Owing to his collapsed condition, we waited for some hours to allow a rectal saline, morphia, digitalin, and hot-water bottles to improve his condition

Operation —The belly was opened through a right paramedian incision and revealed at once a normal gall-bladder The lesser omentum was bile-stained near its hepatic attachment The peritoneum, appendix, duodenum, stomach, spleen, and colon were all rapidly examined and found normal though slight enlargement of the spleen was noted When examining the gall-bladder we noted a circular white patch about half an inch diameter, flat, and not raised above the surface, on the anterior surface of the adjacent liver On re-examination of this patch we came to the conclusion that it was a peritoneal scar, though it had a superficial resemblance to a Farr's tubercle

We examined the liver carefully, primarily for malignant disease, but also with Case 1 present in our minds Just to the right of the falciform ligament, on the anterior surface of the liver, there seemed to be bulging of the organ, localised midway between the bare area and the anterior edge It was under the ribs The bulge appeared to be about 2 inches in diameter, and we thought that fluctuation was present Accordingly we dragged the liver gently down and had a look The tension on the liver smoothed out the bulge we had felt, and the surface of the suspected area was in no way different to the surrounding surface, but on inserting a trocar of moderate size pus escaped from the cannula We packed off the area and opened the abscess by the Hilton technique It was near the surface and there was very little hæmorrhage but a great deal of pus We plugged the cavity with a sponge and had another look at the scar We tested it for fluctuation and were doubtful We tested it with the sterilised trocar and a little pus escaped exception of four cases (M. M., K. C., H. C., and Mrs. K.) M. M. and K. C. admitted having had some of the ice-cream, though not for about four to six weeks before their onset, but they passed the stall daily on their way to and from work, and their history did not appear to be very reliable. In many cases the incubation period was very short, down even to a one-day doubtful possibility, but none were as long as 4–6 weeks with these possible two exceptions. They, moreover, had had some milk from the "X" dairy. This raises a very interesting question as to whether "X" 1 was temporarily slightly infected by the ice-cream he had eaten, but, owing to his T.A.B. inoculation ten years before, was able to resist it. The fact that his Widal was at first considered by an experienced bacteriologist to be positive suggests the possibility that his agglutinating powers, already in existence owing to his previous inoculation, had received a slight stimulus, but not sufficient to produce a lasting positive Widal. This can, of course, only be a matter for speculation.

• H. C. is a young girl of 16, who very positively denied having had any of Mrs. "A's" ice-cream, and we could trace no connexion at all. However, she agrees to passing the stall occasionally, but in any case she started rather late in the outbreak and may well have been a contact with some other case, known or unknown. She worked in a factory where one other case worked.

Mrs. K.'s onset was July 27th. It is very doubtful whether she ought to be included in the outbreak or considered as a sporadic case. She had never had any ice-cream from the neighbourhood of stall "A": she had had ice-creams, &c., elsewhere, and she had not been in contact with any known para. B cases.

Origin of Carrier State

There is no evidence to show where Mrs. "A" got her infection or how long she has been a carrier. She denies having had the disease. She is, however, fond of shell-fish and she may have received an intermittent infection from this which raised her agglutinating powers and left her infectious. None of the "A" household contracted the disease, although "A" 1 and "A" 2 ate large quantities of the ice-cream. It is possible that the method of making the ice-cream accounts for this. The milk used was subjected in the evening to a crude pasteurisation process and the ice-cream mixture heated. This would be more or less sterilised for non-sporing organisms. The freezing was done next morning and care has to be taken not to let the freezing mixture come in contact with the ice-cream, or else the salt spoils the flavour. "A" 1 and "A" 2 naturally helped themselves, and so might remain free, but Mrs. "A" would handle freely the cornets and wafers. This is again only speculative.

In tracing contacts efforts were made to investigate those people having connexion with food, such as cases from a sweet shop or from a fish shop selling ready boiled shell-fish, &c. In those cases Widal tests and stool and urine examinations were made throughout the household. The stools and urine were examined before a case was discharged from the hospital to such a home, to a food factory, and also in the case of married women who would have to cook on their return home.

We were fortunate in many ways in this outbreak. In the investigation a very severe thunderstorm on June 16th helped many of the cases to fix their dates. Ample accommodation at the isolation hospital once again proved its value.

CLINICAL REPORT BY G. L. LEGGAT.

The outbreak of paratyphoid B fever which commenced in June, 1926, in the city of Norwich totalled 63 cases; 48 of these cases were admitted to the isolation hospital; the discovered carrier, a suspected carrier, and a five days old infant (born whilst its mother was suffering from paratyphoid), were also accommodated at the hospital for a time. Most of the cases were seen in their own homes before admission to hospital, and an opportunity was thus given of observing them at an earlier stage than is usual in hospital practice.

The first two cases of the series were admitted on Tuesday, June 29th, and further admissions were as under:—

July 4th	2 cases	July 20th	3 cases
" 6th	2 "	" 21st	2 "
" 7th	5 "	" 22nd	1 case
" 9th	4 "	" 23rd	2 cases
" 10th	3 "	" 24th	1 case
" 11th	1 case	" 26th	1 "
" 13th	5 cases	" 27th	2 cases
" 14th	2 "	" 29th	1 case
" 16th	3 "	" 31st	1 "
" 17th	2 "	Aug. 1st	1 "
" 19th	2 "		

The age and sex distribution of the cases was as under:—

Year—	2–3	3–4	4–5	5–10	10–15	15–20	20–35	Over 35	Total.
Male ..	—	1	—	6	1	2	—	—	10
Female	2	4	—	8	8	11	3	2	38
Total ..	2	5	—	14	9	13	3	2	48

Seventy-five per cent. of the total cases occurred between the ages of 5 to 20. The proportion of female cases is very striking—practically 80 per cent.

The figures for the period 10–20 years—three males and 19 females—rather tends to confirm the idea that whilst a young girl spends her odd coppers on sweets or ice-cream, the youth of the same age, before as well as after leaving school, spends his on cigarettes!

Incubation Period.

The incubation period was short, in the majority of cases apparently not exceeding ten days. An accurate figure was not possible in many of the cases—a considerable number were young children, whose information could not be relied on; further, many cases had eaten ice-cream frequently from the infecting source, and the true moment of infection could only be a matter of conjecture.

In 19 of the 48 cases the incubation period can be accepted as definite, and an analysis of these 19 cases gives the following result:—

Incubation period.	Cases.	Incubation period.	Cases.
5 days ..	3	10 days	1
6 " ..	5	11 "	4
7 " ..	3	12 "	1
8 " ..	1	18 "	1

Onset.

The onset was distinctly abrupt in character; most of the cases were compelled to take to bed within a day or two of their first symptoms. The abruptness, accompanied by a sequence of symptoms of which headache, lassitude, muscular or joint pains, shivering, and abdominal discomfort were the most prominent, accounts for the fact that many of the patients attributed their condition to either "influenza" or a "chill" on the bowel. The insidious onset usually associated with the enteric group of fevers was decidedly exceptional.

Type.

The type of disease was definitely mild: the period of pyrexia in many cases was not prolonged beyond ten days and the degree of constitutional disturbance was not very marked.

The 48 cases may be grouped as under in their degrees of severity:—

Severe attack	7 cases.
Average "	8 "
Mild "	33 "

Of the 7 cases grouped as severe 4 were in the age-group 15–20; one was 9 years of age, one 12 years, and one 26 years.

Symptoms and Signs.

The majority of these may be dealt with briefly in tabular form:—

Headache: Present in varying degree in practically every case.
Vomiting. In 15 cases.
Muscular pains: 12 cases.
Epistaxis 13 cases.
Abdominal tenderness: 30 cases
Diarrhœa and constipation were present in 22 and 18 cases respectively; in two instances definite slough was passed.
Lassitude. In 30 cases.
Shivering: 7 cases.
Abdominal pains: 25 cases.
Cough: 7 cases.

Tracing the Infection

It was soon recognised that all the cases were coming from one comparatively small area in rather a poor part of the city A little spread occurred later, owing to visiting Moreover, Dr. Leggat was early impressed with the fact that the great majority of the cases were young girls and this, coupled with the hot weather at that time, made him suspect ice-cream An inquiry sheet showing the suspected articles of diet and inquiry amongst the cases in the isolation hospital tended to confirm this, and implicated a certain ice-cream stall, "A," recently set up in the middle of the affected district On July 6th I stopped the sale of ice-cream from the stall "A" However, not all the cases gave a history of ice-cream from this stall In particular three girls (M M, K C, and D B) denied it, but M. M and D. B gave a history of ice-cream from other supplies, shop "B" and barrow "C" On inquiry, stall "A" got the milk for making ice-cream from a certain dairy, "X," and so did shop "B" and barrow "C," and dairy "X" supplied some milk to the household of the girl K C. Therefore dairy "X" appeared to be implicated, and I visited it on July 6th I found a man and wife (Mr and Mrs "X") with four sons ("X" 1, "X" 2, "X" 3, "X" 4), a hired lad, "X" 5, and a serving girl, "X" 6, working the dairy "X" 2 had a decided attack of jaundice when seen on July 6th and gave a history of being off colour a fortnight before to such an extent that he had gone once to his doctor, but had continued as a roundsman Although jaundice is only rare in enteric fever, I stopped him from work until further investigations could be made, but I did not feel justified in closing the dairy At my request Dr W P Yetts was sent from the Ministry of Health on July 7th to assist in the investigations, I am very greatly indebted to him for his advice and help, which were invaluable

Stall or Dairy?

Thus far, the two probable sources of infection seriously suspected were stall "A" and dairy "X," but in the meantime, all the cases then being notified were throwing more emphasis on stall "A" to the exclusion of all other sources

A Widal test and bacteriological examination of the stool and urine of each member of the "X" household showed that —

Mrs "X" had a negative Widal and urine, but her stool contained non-lactose fermenters which gave para B sugar reactions but did not agglutinate with the para B serum

"X" 1 had a slightly positive Widal—i e, one hour in 1 in 40 This was complicated by the fact that he had been inoculated in 1916 with T A B as his army pay-book showed His stools were also examined The first stool examined showed nothing abnormel, but a further stool, obtained by calomel and mag sulph, showed the presence of non-lactose fermenters which agglutinated with para B serum

"X" 2, the son who had the jaundice and previous indisposition, had a negative Widal with a negative urine, but his stool showed the same non-lactose fermenters as Mrs. "X."

Mr "X," "X" 3, "X" 4, "X" 5, and "X" 6 all had negative Widals, stools, and urines

The fact that non-lactose fermenting organisms with the correct sugar reactions of *B paratyphosus* B did not agglutinate with para. B serum had to be discounted to some extent, owing to the opinion, expressed in many books, that true organisms if *recently* isolated might fail to agglutinate with the appropriate serum, so that these organisms in spite of non-agglutination might have been para B bacilli and the cause of the outbreak However, there has been no evidence in this outbreak of this failure of agglutination in newly isolated organisms "X" 1 was removed to the isolation hospital for observation, Mrs "X" and "X" 2 were requested to leave the dairy premises entirely, which they did as the alternative to having the dairy shut down altogether; the dairy was thoroughly cleansed and everything which could be boiled, including glass milk bottles, was boiled, and such utensils as brushes were burnt. Notices to Mrs. "X," "X" 1, and "X" 2 were served under the Public Health (Pneumonia, Malaria, Dysentery, &c) Regulations, 1919.

Home Visits.

Visits were made to the farm supplying the majority of the milk to the dairy and a Widal taken of every member of the household and all the farm personnel, consisting of seven hands, who came into any contact with the milk, and all were interrogated as to their previous history The dairy farm was also examined and the water tested However, all the personal histories, the Widals, and the water tests proved negative and the farm had to be considered free Moreover, inquiries showed that para B had not been in the district for some years In the meantime further cases were occurring and the histories obtained pointed more strongly to stall "A" and the investigation of that was started as soon as possible. Inquiry into the household showed the presence of Mr and Mrs "A," a daughter "A" 1, and a young female shop assistant, "A" 2 Mrs "A," previously a public-house keeper, started to make and retail from Easter, 1926, ice-creams chiefly as halfpenny cornets and penny wafers from a stall outside their small drapery shop, with also a small trade in lemonade and wrapped confectionery The family history of the "A" household showed that Mr "A" had 30 years previously had some enteric fever called typhoid fever, but none of the others had ever had any such disease However a Widal test and a stool and urine examination of every member of the stall "A" household was done. All were entirely negative to T.A B except Mrs "A," who had a positive Widal to para B (half an hour in 1 in 40 dilution) with stools full of non-lactose fermenters giving the sugar reactions of para B and agglutinating with para B serum Therefore she was removed to the isolation hospital, and we felt confident she was the source of the outbreak as, on being questioned, "X" 1, who delivered the milk to the "A" household, remembered having on one occasion eaten ice-cream from Mrs "A," so that, even if dairy "X" were implicated, Mrs "A" might still be the originator of the outbreak The prompt cessation of the outbreak fully confirmed this

Release of the Dairy

However, blood for a Widal and a sample of stool and urine from "X" 1, and cultures of the suspicious non-lactose fermenters obtained from other members of the "X" family had in the meantime been sent to the Ministry of Health bacteriological laboratory and they were all returned as negative with regard to para B As a fact the first specimen of stool from "X" 1 sent to the Ministry had been obtained by means of calomel and mag sulph, and this proved sterile, an interesting point However, other specimens contained the non-lactose fermenters It was reported by the Ministry laboratory that these were not para B organisms and that the "X" 1 Widal agglutination was so slight as to be negative Therefore the control of the "X" dairy was released on July 20th. Two subsidiary supplies of milk to that dairy and the complete list of customers divided into separate rounds were about to be investigated when the arrival of these negative results removed the necessity, from the point of view of this outbreak

The first case of the outbreak was notified on June 22nd with its onset on the 10th The last case was notified on August 9th, with its onset on July 27th The last case was discharged from the isolation hospital on Sept 7th The carrier, Mrs "A," was discharged on Sept 14th, though still an active carrier, as she was very depressed, requiring alcohol and bromide She was served with a notice under the Public Health (Pneumonia, Malaria, Dysentery, &c) Regulations, 1919, and given explicit instructions

The Ice-Cream Stall

Of the 63 cases of the outbreak all were found to have had some ice-cream from stall "A" or to be immediate contacts of such proved cases, with the more extensive hæmorrhage should have occurred and it is difficult to understand why it did not. The second case appears more remarkable. Osler mentions that rupture of the spleen may occur from the breaking of an infarct but adds that the symptoms are those of hæmorrhage into the abdomen. Here, however, there were no symptoms of hæmorrhage into the peritoneal cavity, and the patient lived for nine days after the injury. A further point in this case is that the spleen, though much enlarged, was not palpable below the costal margin Where spleens are large and tempers uncertain, rupture of the spleen is not uncommon: but usually there are definite signs These two cases illustrate difficulties which may arise and are instances of the treachery of abdominal complaints in mental patients

I am indebted to Dr W. F. Samuels the medical superintendent, for permission to publish these cases

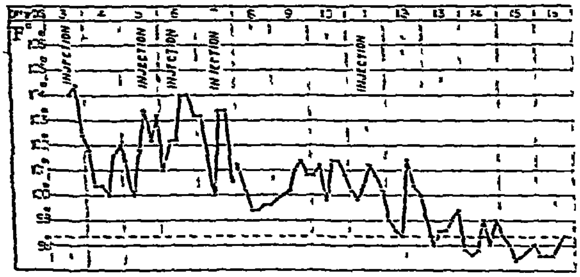
A CASE OF LOBAR PNEUMONIA

TREATED WITH OIL OF TURPENTINE

BY J CHRISTIE-ANDERSON, M.B. ABERD, L.D S. R.C S ENG.

IN cases of pneumonia I have for some time been using a 10 per cent. pure oleaginous solution of rectified turpentine, prepared according to the formula of Prof. Viktor Klingmüller. The dose I have given is 1 to 3 c cm. in adults, ½ c cm in children, intramuscular injection. In no case has there been any irritation or abscess-formation at the site of injection but caution is necessary with this drug, as nephritis has been recorded after its use in children. The following is an illustrative case.

I was called to see a man aged 24, whom I found suffering from lobar pneumonia at the right lower lobe. It was the third day of the disease, there was rusty sputum, and the temperature was 104 2° F. Within an hour I injected 1 c.cm of the turpentine preparation and ordered the usual stimulants The subsequent course of the disease is shown in the chart which indicates the favourable influence of the injections (all of 1 c.cm.) The third was given at a time when the patient was very much distressed, and the effect appeared to be remarkable



On the eighth day of the illness the crisis might be expected and there was in fact a fall of temperature. But this was not maintained and on the eleventh day I gave another injection with satisfactory results.

It will be seen that after each injection there was a marked remission of temperature; the drug seemed to relieve the distressing clinical manifestations enough to allow the patient to battle afresh In a number of other cases also in broncho-pneumonia and bad cases of bronchitis, I have had similar experience of the treatment

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RADCLIFFE INFIRMARY'S CONTRIBUTORY SCHEME.—Last year 60 per cent. of the total income of this Oxford hospital was provided by the Contributory Fund which amounted to £27,000 The Fund covers a radius of 20 miles from the city, the membership is approximately 70 000, and there are 344 affiliated hospital committees. The out-patients clinic for nervous disorders has been successful enough to warrant the closing of an entire ward in the Littlemore Mental Hospital.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF SURGERY.

AT a meeting of this Section, held on June 1st, the chair being occupied by Mr. V. WARREN LOW, its President, a discussion on the

TREATMENT OF CLEFT-PALATE BY OPERATION

was opened by Sir JAMES BERRY, President of the Society, and Mr G. GREY TURNER (Newcastle-on-Tyne).

Sixteen years said Sir James Berry, had elapsed since the Section had last debated this subject, and he invited all who had had experience of cleft-palate operations to relate their results In the earlier debate discussion mainly turned on the comparative values of the turn-over flap and the lateral approximation of the edges of the cleft. In this comparison age was an important factor. Practically the sole object of operating on cleft-palate was to make possible intelligible speech: few if any surgeons now maintained that the operation was undertaken to save life. Yet it was true that an infant with cleft-palate, being unable to take the breast, might die of inanition, although swallowing was not interfered with by the cleft Such an infant should first be carefully fed: there should be no thought of immediate operation which entailed risk from loss of blood and possible sepsis A certain proportion of clefts were very narrow and affected only the soft palate or a part of it; they could often be closed by lateral approximation within a few weeks of birth if so desired. With most clefts, however this was impossible on account of the width of the gap and the lowness of the palatine arch There was a tendency for a cleft of the soft palate, wide at birth, gradually to become narrower; this sometimes happened even if the cleft extended to the hard palate Closure was more rapid when the accompanying hare-lip had been dealt with, as it always should be, within the first few months of life. If an operation was imperative in early infancy for extensive cleft it must be by the turn-over method. The use of wire for forcibly approximating the jaw bones was open to serious objection.

Operation should be undertaken, Sir James Berry continued, at the earliest age which gave a chance, in the surgeon s own experience, of closing the cleft by lateral approximation. His own choice was between 1½ and 4 years of age. A surgeon with less experience would do well to wait until a much later age in the patient's life. Otherwise there was a risk of leaving the palate in a condition which offered less chance of completely remedying the defect later owing to scarring and loss of tissue. Since the earlier debate on the subject he had himself in a number of cases attempted closure at an earlier age than was his former custom, but he was not pleased with the venture, for part of the hard palate had remained unclosed, needing a further operation. Not much was gained, he thought by closing the soft palate at an early age and leaving the hard palate to be dealt with at a later period, when the presence of scar tissue rendered it more difficult to separate the soft tissues from the posterior edge of the bony palate. The most difficult cases, he had found were those in which the cleft was very wide and involved the soft and most of the hard palate, and in these he elected to close the cleft in the soft palate first leaving the hard palate for a time It was often better to leave the anterior end of the cleft unclosed rather than endanger the vitality of the flaps by severing the anterior palatine artery. The small hole remaining might close spontaneously, or require at most a small subsequent operation. Greatest importance attached to closure of the soft palate: a patient was but little benefited if the rent in the hard palate was closed and that in the soft palate remained open No obturator was as good as a well-restored soft palate

The following clinical notes are perhaps of special interest —

The *abdominal reflexes* were studied in all patients; in the severer cases they were usually absent; late in these severe cases, and in those of a mild type, their presence or absence was extremely variable, one feels that too much stress must not be given to this side

The *Diazo reaction* in the urine was carried out in all cases, in 26 of the 48 cases it was found to be positive

Spleen —Examination gave the following results *Palpable* definitely in 18 cases, and in 6 of these appreciably tender to the patient. In several of the youngest children the enlargement was pronounced Enlargement *on percussion* was noted in eight other cases, and *tenderness* only, on palpating the splenic region, was elicited in six cases Therefore in 36 of the 48 cases some degree of splenic abnormality was detected This may seem a high proportion, but, as pointed out earlier, most of these cases were seen prior to admission and at an earlier stage than is customary in hospital practice

Rash

In 37 of the 48 cases the rash was present The rash varied in intensity from a few scattered spots to a succession of profuse crops In many cases the typical spots were seen when the patients were visited in their own homes, this high proportion showing a rash inclines one strongly to the view that the rash of paratyphoid B fever is possibly present in all cases at some period during the course of the disease

Wasting was quite appreciable in 20 cases, and in five of these it was severe

Complications.

Hæmorrhage and perforation Nil

Thrombosis. Three cases—one of the left femoral and two of the right popliteal vein

Boils occurred in two cases

Relapses Eight patients relapsed—in four of these cases the relapse commenced before the primary attack had terminated, in three within a week, and in one after an interval of a fortnight The primary attack was severe in two of these cases, average in two, and mild in four. The relapse in all cases was mild in character One of the cases with *thrombosis* developed this condition during the course of her relapse

Treatment —The cases were all treated on expectant lines and the dietary from the commencement was liberal

Clinical and Laboratory Notes.

HYPERTROPHY OF THE TONSILS IN LYMPHATIC LEUKÆMIA

BY F STOKER, M B DURH, F R C S EDIN,
SURGEON IN CHARGE OF THROAT AND EAR DEPARTMENT, QUEEN MARY'S HOSPITAL, AND THE ITALIAN HOSPITAL, LONDON

Lymphatic leukæmia, though recognised as a cause of tonsillar hypertrophy, is not commonly given as such in the text-books Yet the importance of appreciating this association is obvious, for the operative removal of leukæmic tonsils must lead to disappointment, or even to disaster The following case may be looked upon as of the type likely to be referred to the surgeon, though the patient had attained a more advanced age than is usual in this disease

A man, aged 55, was referred to the throat department of Queen Mary's Hospital for investigation of a possible cause of enlarged glands in both anterior triangles He had lost weight, was sallow in complexion, but complained of no symptoms The glands were only moderately enlarged, three masses as large as green almonds being in both anterior triangles They were not hard nor in the least tender, were painless and freely movable The soft palate and anterior pillars were of a dusky reddish hue, and the pillars were stretched over the tonsils Both faucial and lingual tonsils were markedly hypertrophied, the hypertrophy was symmetrical and disposed in a lobulate fashion, particularly in the lingual area The hypertrophied parts were yellowish-grey tinged with violet in colour, and looked friable, almost suggesting sarcoma to the cursory eye, on palpation they were firm and of the resiliency of quarter-inch rubber tubing The pharyngeal and Eustachian tonsils were not involved, nor were any other lymphoid follicles in the mouth or throat

A piece of the right tonsil was taken for microscopic examination, and Dr Arthur Davies reported that "the outer lining membrane of the specimen consisted of stratified epithelium, the deepest layers of which were regular, and showed no tendency to transgress its normal limits Subjacent to this epithelial lining was found lymphadenoid tissue occupied by masses of cells resembling leucocytes The blood-supply was not abnormal. The usual picture of the tonsil germ centres was not as marked as was usual on account of the dense aggregations of small round cells There was no evidence of a malignant process A blood count might afford useful information"

Dr J Standish did a blood count and reported as follows hæmoglobin, 85 per cent, red cells, 4,320,000, colour-index, 1; total white cells, 168,000, polymorphs, 6 per cent, eosinophils, 0, mononuclears, 2 per cent., small lymphocytes, 92 per cent

The diagnosis appears to rest on the absence of symptoms, the symmetrical hypertrophy and its appearance, the painless enlargement of freely movable and elastic glands, and particularly upon the blood count I should like to take this opportunity of expressing my gratitude to Dr Davies and to Dr Standish, pathologists to the hospital, for the assistance given to me

TWO FATAL CASES OF UNSUSPECTED RUPTURE OF THE SPLEEN

BY F. WILSON, M B ABERD,
ASSISTANT MEDICAL SUPERINTENDENT, CENTRAL MENTAL HOSPITAL, TANJONG RAMBUTAM, FEDERATED MALAY STATES

IN the following cases rupture of the spleen occurred without producing definite signs of an abdominal accident.—

CASE 1 —A Chinese male epileptic, aged 17, had a series of seizures on June 23rd, 1926, and passed into status epilepticus On examination his pulse was regular, 80 per minute, and with good tension The spleen was palpable, about two fingers-breadth below the costal margin No rigidity or tenderness on pressure was noted An enema was given, followed by chloral and bromide per rectum. The seizures stopped, but the patient remained in a semi-conscious condition till the morning of June 26th, when he died

At autopsy a considerable amount of faintly blood-stained fluid appeared when the peritoneum was opened The spleen was soft, enlarged, weighed 20 oz, and showed malarial pigmentation On the lower surface there was a rupture 2½ in. long and ¼ in deep filled with a semi-organised blood clot which surrounded almost the whole spleen There was marked congestion of all the organs

CASE 2 —On August 24th, 1926, a Chinese male dement, aged 55, was admitted into the infirmary ward complaining of pain in the left hypochondrium The history given was that a log had fallen on him while he was lifting firewood He had a few abrasions on the lower extremities but no marks of injury on the abdomen Nothing suggested an abdominal accident Two days after admission all pain had disappeared, he was eating and sleeping well, and was allowed to move about

On Sept 2nd, nine days after admission, he again complained of pain, and was seen at 7 A M. by the senior assistant physician who noted that the pulse was 100 per minute, but of quite good tension, the temperature was 98 4° F, and on palpation no tenderness, rigidity, or enlargement of the spleen was evident The patient was seen afterwards by myself and another colleague His pulse was then 110 per minute, but our examination confirmed the notes previously made Nothing suggested an abdominal catastrophe, and the spleen was not palpable The patient died quite suddenly at 11 30 A M on the same day

Post-mortem Examination —The spleen was enlarged, weighing 24 oz, but did not appear below the costal margin On section numerous infarcts were seen of varying age One recent infarct on the lower surface, about 2 in in diameter, had ruptured, as also had the capsule over it From this point a large semi-organised blood clot spread under the capsule for a short distance and surrounded the whole of the lower surface of the spleen The peritoneal cavity contained a small amount of straw-coloured fluid but no trace of fluid blood was seen Apart from the spleen, the only abnormalities noted post mortem were marked arteriosclerosis and amyloid degeneration of the liver, both probably of syphilitic origin

In the first case the rupture probably occurred as the result of a fall in a seizure, and the presence of status epilepticus was not helpful to diagnosis The general congestion of the organs suggested that a was deficient the Langenbeck method gave the better result.

Mr. H. D. GILLIES made some remarks on secondary operations The great majority of cases, he said, would be vastly improved by severing the soft from the hard palate, making provision for an epithelial covering of all raw areas, interposing an appliance between the soft and the hard palate, and allowing the soft palate to assist in shutting off the nasal from the buccal cavity.

Mr C H FAGGE said that up to the end of 1924 he had operated 218 times on 114 cleft-palate patients, some of these operations were on the lips, others for closure of holes in the palate On the largest group of cases, those of complete unilateral cleft, he first performed a Lane's flap operation on the hard palate, then a hare-lip operation, and finally closed the soft palate at a second sitting He had never failed to close a hard palate with a Lane's flap, nor had he seen one break down Lane's operation did not make the operation on the soft palate any more difficult. He had an impression that whenever he could close both the hard palate and the soft before the first dentition commenced he would obtain a good anatomical result With the Langenbeck operation pure and simple he had had about 60 per cent of successes and 5 per cent of complete failures; with the combined operation 62 per cent of successes and no complete failures; and with the complete Lane operation 33 per cent of successes and a good many failures In performing the Langenbeck operation he made use of a very long incision on either side, dividing the anterior pillar of the fauces, after which the two surfaces of the palate were sutured in the middle line with very fine fishing gut The one thing he feared was tension

Mr KELSEY FRY, speaking as a dental surgeon, said that if surgeons would provide for the cleft-palate patient a functional soft palate it would be an easy matter for the dentist to provide a hard palate

Mr F W. GOYDER (Bradford) said he operated fairly late, rarely on patients under 3 years, following Langenbeck's method except when the clefts were very wide. In his last 22 cases he had used a flap in 11 and the median operation in the other 11. Even when doing the Langenbeck operation he used narrow flaps and united them so as to leave no raw surface

Mr L E BARRINGTON-WARD said he had operated on 148 patients, with six failures One of these was a horseshoe cleft, which was usually the most difficult, three had deficiencies in hard or soft palate, and in two the alveolus was still cleft Recent speech-testing in 58 of these patients gave 20 good results, 18 fair, and 20 bad, among the bad were four mentally deficient If a hare-lip was associated with the deformity the operation should take place as early as possible; his usual rule was to do it at 1 month. The palate itself he preferred to do at 18 months or 2 years, or even later. He did Langenbeck's (which he thought posterity would call Berry's) operation, lateral approximation to median suture, using the finest ophthalmic silkworm-gut He believed that relaxation sutures nearly always cut out or produced ulceration With regard to prognosis in the matter of speech he would be guided not so much by the type of cleft as by the intelligence of the mother

Mr TWISTINGTON HIGGINS said he had operated on 47 cases since 1921, using the modification of Gillies—a relatively easy procedure—the only difficulty being the epithelial graft with which it was necessary to cover the raw area He had also adopted Mr. Addison's technique in 15 cases, removing the tonsils previous to operation, for they were often infected without external sign to show it

The PRESIDENT, in summing up the discussion, said that he had been struck by the extraordinarily hopeful outlook there was now for the child born with cleft-palate He was sorry that not more had been heard about the Brophy operation.

Sir JAMES BERRY and Mr. GREY TURNER briefly replied.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

A MEETING of this Society took place on May 27th, Sir HUMPHRY ROLLESTON, the President, in the chair

Dr. GEORGE RIDDOCH read a paper on the

PROGNOSIS AND TREATMENT OF NEUROSYPHILIS

The localisation of the virus to the nervous system, he said, was never more than relative; the functions of the other organs might be deranged, or those of the body as a whole might be impaired by the spirochæte The defensive reaction of the patient to the invading parasite must be considered, and differences in the severity of tabes in different people were not due merely to differences in the strength of the virus

Two important questions arose (1) Could the disease be arrested? (2) If so, how much disability would be left? Probably there was no natural immunity to the disease, but the history of syphilis showed that considerable inherited resistance was present. In estimating the prognosis in any particular case the patient's power to combat the infection was very important It would be influenced, moreover, by such non-specific factors as nephritis, diabetes, urinary sepsis secondary to paralysis of the bladder, or by faulty habits such as abuse of alcohol. Another important point was the duration of the disease and of its nervous manifestations. Early diagnosis was very necessary, for obviously a patient whose tabes was detected when there were but few physical signs was a better subject than one who already had multiple and extensive lesions in the nervous system The same held true in cerebral syphilis.

Meningovascular syphilis was more amenable to treatment than the parenchymatous forms, because it was difficult for drugs circulating in the blood stream to reach organisms in nerve tissue When definite mental symptoms, such as dementia and delusions, occurred in cerebral syphilis it was evident that encephalitis was present, and the state of affairs was very difficult to deal with, there was less chance of making the patient a "good life" than if the disease had been caught earlier. Epilepsy as a sequel of cerebral syphilis indicated encephalitis of a serious kind. Optic neuritis had a similar significance, but cranial nerve palsies might be due to involvement of a nerve in its extracranial course, rather than to an active arterial lesion, and this did not imply so serious an outlook In spinal syphilis there was, of course, a better chance of eradicating the disease if the infection had not caused severe paraplegia with its probable disturbance of the bladder. It was always necessary to bear in mind the tendency of neurosyphilis to undergo remission and relapse, even after treatment had made the laboratory tests negative It might be said that with efficient treatment tabes could be arrested in half the cases, but this did not by any means imply that treatment should be discontinued after the arrest Tabes was now seen earlier at neurological clinics, and it was rare to see patients who on their first application were grossly ataxic or nearly blind For this improved state of affairs he thought the general practitioner was largely responsible

General paralysis of the insane, continued Dr. Riddoch, was a much more discouraging condition, and before malarial treatment was instituted the outlook had been almost desperate, death being rarely deferred for more than two or three years Malaria gave ground for hope, though its value could not yet be assessed

There was a group of cases of what could be described as occult neurosyphilis There was a danger of confusing this condition with ordinary neurasthenia, because it was accompanied by lassitude, defective concentration, and emotional instability; or it might be wrongly attributed to alcoholic indulgence Probably the symptoms were mostly due to a mild meningoencephalitis rather than to gross

Lateral approximation, said Sir James Berry, was the method most surgeons now employed, though there was a good deal of difference of opinion concerning it. His own impressions were based upon an experience of 33 years, during which time he had operated on 276 cleft-palates. A precedent to the operation should be the removal of gross defects of teeth and tonsils, not necessarily a routine excision of tonsils and adenoids. Nor was it needful to attempt asepsis of the mouth some days before operating. The general health of the child must be good and nasal catarrh must first be cured. The posture he preferred to adopt when doing these operations was to stand on the right side of the patient facing the head, which was thrown well back with shoulders raised, so that the blood ran into the upper part of the pharynx, not into the larynx. The disadvantage of this posture was occasional faintness, but the bleeding was less than in any other posture. Smith's gag was to be preferred if the assistant had been trained in the holding of it.

On two points, Sir James Berry said, he would like to hear the opinion of others. The first was the extent to which the soft tissues should be separated from the bony palate. Unless the separation were thorough the soft palate, even if that alone were affected, could not be brought down sufficiently for the pared edges to be pulled together without tension, and tension meant failure of union. The separation was best brought about, in his opinion, from inside the cleft, avoiding the vicinity of the posterior palatine artery. The nasal intonation characteristic of cleft-palate speech was caused by abnormal air entry into the nose, which in normal people was avoided by raising the soft palate and by lateral approximation of the palato-pharyngeal muscles. The second point was the need of making lateral incisions to relieve tension. With wide and difficult clefts such incisions were frequently essential, on one side or both, but seldom should they exceed half an inch in length, unless for secondary operations for large holes in the hard palate. Of recent years his practice had been to employ these incisions less and less, replacing them by deep-tension stitches and rubber plates, after the manner of Brophy. Stout fishing gut tended to cut out, he had tried putting short pieces of rubber tubing on the suture, but they buckled and caused ulceration. Eventually he had found satisfaction in flat oval discs of sheet rubber threaded on stout fishing gut. They did not increase the liability to sepsis if removed on the fifth day, by which time union should be strong enough to stand the strain imposed by the palatine muscles. They would be useless for the thinner tissues of the hard palate. He had had no experience of the very long lateral incisions; he thought they must damage unduly the palatine and pharyngeal muscles.

The less after-treatment the better the result. For at least a week the diet must be confined to milk or milk and water, no washing, wiping, or spraying of the mouth was allowed, apart from a drink of warm water after each feed. The child should be kept in the fresh air as far as possible. He did not examine the palate until four days after the operation, and decided then how soon the plates should be removed.

Mr. Grey Turner spoke from an experience of 155 cases of cleft-palate, upon whom 195 operations had been done with four deaths. The average age at operation of the children under 12 was 4 4/12 years, and of those over 12 was 18 9/12 years. The oldest was 40. He had been able to examine 79 of these cases 1–24 years after operation and to estimate the functional result in 90. These he classed as: very good or normal, 10; good, 35; fair or moderate, 25, bad or poor, 17; unintelligible, 3. In 11 cases operations had previously been performed by other surgeons. Failure of union occurred only once. In 44 cases in which the palate was completely restored anatomically speech was normal in 7 cases, good in 20, fair in 14, bad in 3. In 12 the operation was still too recent to assess the result. To ensure success from the speech standpoint the patient should be left with a good soft palate, and if possible one which was sensitive. The varying result was, he thought, connected with the architecture of the nasopharynx and with the neuromuscular apparatus. Integrity of the sphincter just behind the soft palate had much to do with perfect speech. He did not hesitate himself to operate on soft palates within the first year of life and to allow the infant to return home. A lateral incision, though often necessary, was not an essential part of the operation. Tension must be avoided at any cost. Suture material should be of a sort which did not absorb the secretions of the mouth, he now used chromicised catgut. In certain cases much could be accomplished by a secondary operation, he had operated four times on one patient. He would like to know how holes in the palate could be avoided. In regard to hare-lip, he had found that large anterior nares facilitated the escape of air through the nose, and might interfere with a good functional result.

Discussion.

Mr. O. L. Addison condemned the flap operation. He did not think there was any advantage in operating before the age of learning to talk; the older the patient when operated upon the more likely were anatomically good results to ensue. He preferred the long lateral incision to avoid tension. Before touching the palate he always removed the tonsils, which he regarded as a source of potential sepsis. All his patients were Dick tested beforehand, and if positive received a dose of serum. Of his 77 cases two died, one from reactionary hæmorrhage the night following operation, the other from convulsions under the anæsthetic.

Dr. Victor Veau (Paris) said he had operated upon 89 children's palates by the Langenbeck method, and in 74 there was total closure, in 13 imperfect closure, in 3 the operation was a total failure, 25 per cent. of the patients spoke well after the operation. He described his present procedure, which consisted in turning up a flap from the vomer and carefully suturing the mucous membrane, thus preventing scar formation. He showed some phonographic records.

Mr. A. T. Pitts dealt with the subject from the point of view of the dental surgeon. Surgical treatment, he agreed, was better than condemning the patient to wear a prosthetic appliance, but when surgical efforts had been given a trial and failed the patient's condition was always worse and serious deformities of the jaw might follow. Cases of this kind needed the closest cooperation between surgeon and dentist.

Mr. Cyril Nitch gave records of 86 cases (with four deaths) of which only 43 could be traced to discover speech results. The age at which the cleft should be closed depended, he thought, on the type of operation done. The flap operation of Lane should be performed about four months before the teeth were developed. He had not, however, performed that operation since 1913, for though the cleft could be closed with certainty, the soft palate was always short and rigid, and the speech correspondingly bad. The age he generally selected for operation was from 18 months to 2 years. He always tried to close the whole cleft at one operation, provided the anterior palatine arch could be preserved. He made long lateral incisions at the posterior border close to the alveolus, curving outwards and downwards towards the last lower molar tooth. The mother should be taught to massage the soft palate after operation. Since he had adopted Langenbeck's operation with long tension-relieving incisions and lateral splints his failures had been reduced to 17 per cent., as compared with 50 per cent. with the unmodified Langenbeck.

Mr. Cortlandt MacMahon spoke of the speech-training of these patients. The difficulty was with the letters *k*, *g*, *d*, and *t*, but especially the letter *s*. The letter *s* could be restored in the speech of these patients by driving the tongue down so as to produce tension between the soft palate and the back of the tongue. He believed that under training the Lane operation would give good speech, but if the training was deficient the Langenbeck method gave the better result.

Mr. H. D. GILLIES made some remarks on secondary operations. The great majority of cases, he said, would be vastly improved by severing the soft from the hard palate, making provision for an epithelial covering of all raw areas, interposing an appliance between the soft and the hard palate, and allowing the soft palate to assist in shutting off the nasal from the buccal cavity.

Mr. C. H. FAGGE said that up to the end of 1924 he had operated 218 times on 114 cleft-palate patients, some of these operations were on the lips, others for closure of holes in the palate. On the largest group of cases, those of complete unilateral cleft, he first performed a Lane's flap operation on the hard palate, then a hare-lip operation, and finally closed the soft palate at a second sitting. He had never failed to close a hard palate with a Lane's flap, nor had he seen one break down. Lane's operation did not make the operation on the soft palate any more difficult. He had an impression that whenever he could close both the hard palate and the soft before the first dentition commenced he would obtain a good anatomical result. With the Langenbeck operation pure and simple he had had about 60 per cent. of successes and 5 per cent. of complete failures, with the combined operation 62 per cent. of successes and no complete failures; and with the complete Lane operation 33 per cent. of successes and a good many failures. In performing the Langenbeck operation he made use of a very long incision on either side, dividing the anterior pillar of the fauces, after which the two surfaces of the palate were sutured in the middle line with very fine fishing gut. The one thing he feared was tension.

Mr. KELSEY FRY, speaking as a dental surgeon, said that if surgeons would provide for the cleft-palate patient a functional soft palate it would be an easy matter for the dentist to provide a hard palate.

Mr. F. W. GOYDER (Bradford) said he operated fairly late, rarely on patients under 3 years, following Langenbeck's method except when the clefts were very wide. In his last 22 cases he had used a flap in 11 and the median operation in the other 11. Even when doing the Langenbeck operation he used narrow flaps and united them so as to leave no raw surface.

Mr. L. E. BARRINGTON-WARD said he had operated on 148 patients, with six failures. One of these was a horseshoe cleft, which was usually the most difficult, three had deficiencies in hard or soft palate, and in two the alveolus was still cleft. Recent speech-testing in 58 of these patients gave 20 good results, 18 fair, and 20 bad, among the bad were four mentally deficient. If a hare-lip was associated with the deformity the operation should take place as early as possible; his usual rule was to do it at 1 month. The palate itself he preferred to do at 18 months or 2 years, or even later. He did Langenbeck's (which he thought posterity would call Berry's) operation, lateral approximation to median suture, using the finest ophthalmic silkworm-gut. He believed that relaxation sutures nearly always cut out or produced ulceration. With regard to prognosis in the matter of speech he would be guided not so much by the type of cleft as by the intelligence of the mother.

Mr. TWISTINGTON HIGGINS said he had operated on 47 cases since 1921, using the modification of Gillies—a relatively easy procedure—the only difficulty being the epithelial graft with which it was necessary to cover the raw area. He had also adopted Mr. Addison's technique in 15 cases, removing the tonsils previous to operation, for they were often infected without external sign to show it.

The PRESIDENT, in summing up the discussion, said that he had been struck by the extraordinarily hopeful outlook there was now for the child born with cleft-palate. He was sorry that not more had been heard about the Brophy operation.

Sir JAMES BERRY and Mr. GREY TURNER briefly replied.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

A MEETING of this Society took place on May 27th, Sir HUMPHRY ROLLESTON, the President, in the chair. Dr. GEORGE RIDDOCH read a paper on the

PROGNOSIS AND TREATMENT OF NEUROSYPHILIS

The localisation of the virus to the nervous system, he said, was never more than relative, the functions of the other organs might be deranged, or those of the body as a whole might be impaired by the spirochæte. The defensive reaction of the patient to the invading parasite must be considered, and differences in the severity of tabes in different people were not due merely to differences in the strength of the virus.

Two important questions arose: (1) Could the disease be arrested? (2) If so, how much disability would be left? Probably there was no natural immunity to the disease, but the history of syphilis showed that considerable inherited resistance was present. In estimating the prognosis in any particular case the patient's power to combat the infection was very important. It would be influenced, moreover, by such non-specific factors as nephritis, diabetes, urinary sepsis secondary to paralysis of the bladder, or by faulty habits such as abuse of alcohol. Another important point was the duration of the disease and of its nervous manifestations. Early diagnosis was very necessary, for obviously a patient whose tabes was detected when there were but few physical signs was a better subject than one who already had multiple and extensive lesions in the nervous system. The same held true in cerebral syphilis.

Meningovascular syphilis was more amenable to treatment than the parenchymatous forms, because it was difficult for drugs circulating in the blood stream to reach organisms in nerve tissue. When definite mental symptoms, such as dementia and delusions, occurred in cerebral syphilis it was evident that encephalitis was present, and the state of affairs was very difficult to deal with; there was less chance of making the patient a "good life" than if the disease had been caught earlier. Epilepsy as a sequel of cerebral syphilis indicated encephalitis of a serious kind. Optic neuritis had a similar significance, but cranial nerve palsies might be due to involvement of a nerve in its extracranial course, rather than to an active arterial lesion, and this did not imply so serious an outlook. In spinal syphilis there was, of course, a better chance of eradicating the disease if the infection had not caused severe paraplegia with its probable disturbance of the bladder. It was always necessary to bear in mind the tendency of neurosyphilis to undergo remission and relapse, even after treatment had made the laboratory tests negative. It might be said that with efficient treatment tabes could be arrested in half the cases, but this did not by any means imply that treatment should be discontinued after the arrest. Tabes was now seen earlier at neurological clinics, and it was rare to see patients who on their first application were grossly ataxic or nearly blind. For this improved state of affairs he thought the general practitioner was largely responsible.

General paralysis of the insane, continued Dr. Riddoch, was a much more discouraging condition, and before malarial treatment was instituted the outlook had been almost desperate, death being rarely deferred for more than two or three years. Malaria gave ground for hope, though its value could not yet be assessed.

There was a group of cases of what could be described as occult neurosyphilis. There was a danger of confusing this condition with ordinary neurasthenia, because it was accompanied by lassitude, defective concentration, and emotional instability; or it might be wrongly attributed to alcoholic indulgence. Probably the symptoms were mostly due to a mild meningoencephalitis rather than to gross parenchymatous changes Even the pathologist could not always determine whether a patient had syphilitic neurasthenia or early general paralysis of the insane, as the blood might be Wassermann-positive, while the cerebro-spinal fluid was unchanged. It was unwise to lay too much stress on laboratory tests and they must be related to the patient's general state It would be a great mistake to assume that a negative Wassermann reaction following a positive one meant that the patient had got rid of his infection, for it might again become positive, either with or without treatment It was important to know how a patient had dealt with his early infection, as this helped to indicate the degree to which he would combat the later manifestations If early treatment had been thorough the later development was of more serious significance A patient should be told that he might become worse before the treatment had its full effect

Treatment

The general principle to be kept in mind in treatment, said Dr Riddoch was that antisyphilitic remedies were only an aid to the natural resistance of the body ; if used injudiciously they were poisonous to the tissues How could the natural resistance be kept at its highest level ? A quiet, healthy life was necessary, with adequate rest and attention to diet In the tabetic the relief of pain was of considerable importance Amongst things forbidden should be excessive indulgence in tobacco and alcohol and excessive sexual intercourse, whilst in women pregnancy should be discouraged It was important to maintain the morale of these patients so that they would persist with treatment Massage and exercises might be needed Séquard advised daily small doses of salvarsan, either subcutaneously or intravenously, up to 60 injections, without mercury or iodide of potassium In most cases under this treatment the ankle-jerks disappeared after six to ten injections, and Dr Riddoch looked upon this as an indication of active poisoning of peripheral nerves due to administration of the drug being unduly pushed Some advised a preliminary course of mercury before using arsenical preparations, and he believed that salvarsan used alone was less effective than when combined with mercury or bismuth, iodide of potassium being given in all forms of neurosyphilis except general paralysis of the insane He had not found that silver salvarsan gave better results than novarsenobenzol, with potassium iodide by the mouth Tryparsamide had been reported on favourably from the Rockefeller Institute, but he did not think it could yet be said whether it was better than the ordinary arsenical preparations, of which novarsenobillon was the one most used in this country, its capacity being well known and its toxicity controlled He could not say much in favour of salvarsanised serum ; indeed, he had seen aggravation of root-lesions follow its use He did not think any patient should be treated continuously simply because his Wassermann was positive

To be suitable for malarial treatment a case of general paralysis of the insane should be taken early and should be free from cardiovascular and renal disease A patient whose brain had been partially destroyed, with consequent dementia, might recover sufficiently to enable him to do work which did not exact much from him Whilst infected by malaria the patient might exhibit an acute psychosis, or even become maniacal, but he would probably reach his previous mental state on recovering from the malaria

After vascular and parenchymatous lesions, said Dr Riddoch in conclusion, some permanent damage always followed The main indication of the efficacy or otherwise of treatment must be the clinical findings, though help was obtainable from laboratory tests It was very important not to push antisyphilitic remedies unduly, and it was necessary to keep careful watch for signs that the limit of the patient's tolerance had been reached.

Discussion

The PRESIDENT spoke of the possible relationship which amyotrophic lateral sclerosis and disseminated sclerosis might bear to syphilis He asked whether it was the general view that syphilitic hemiplegia due to arterial disease was now rarer than formerly. Was the diminishing frequency of tabes due to earlier and more thorough treatment of syphilis, or was it likely to be due to some special organotropic strain of the spirochæte ? He was reminded of cases described by Erb in which patients given vigorous mercurial treatment had developed what appeared to be tabes, but was in reality polyneuritis There was no doubt that tabes and general paralysis were never cured Referring to the treatment of general paralysis by malaria, he mentioned some fatal cases in Dublin in which the patients had been given the malignant tertian infection With benign tertian malaria there seemed little risk of harm

Colonel L W. HARRISON did not agree with Dr Riddoch's criticism of silver salvarsan ; he thought it caused more improvement than any other arsenical preparation He preferred to use it by the deep subcutaneous method After a patient with general paralysis had been treated with malaria, the cerebro-spinal fluid should not be examined until three months after the malarial paroxysms had ceased His view was that bismuth was a much more valuable drug in the treatment of neurosyphilis than mercury, especially when it was given together with large doses of potassium iodide

Dr C P SYMONDS remarked that the difficulty in assessing the value of any treatment of neurosyphilis lay in the fact that most people had comparatively little experience of the course of the untreated disease From observing cases which had not come for treatment until a late stage he concluded that, apart from syphilitic encephalitis, neurosyphilis was a self-limited disease He had found novarsenobenzol more valuable than mercury in neurosyphilis, and it was important to push remedies to the patient's point of toleration Even if some cases showed jaundice the price was justified in the amelioration of the syphilis In meningeal forms iodide was a very valuable drug He agreed with Dr Riddoch that treatment should be determined by the clinical condition rather than by the serological reactions There seemed no doubt that in a proportion of cases the life of a general paralytic would be prolonged by several years by inducing an attack of malaria In parenchymatous neurosyphilis it was hard to give a prognosis, in tabes he did not think it was safe to promise anything

Dr H M. HANSCHELL related the course of events in 12 cases of general paralysis of the insane which he had treated with malaria In three cases of tabes similarly treated the Wassermann reaction was negative in the cerebro-spinal fluid three months after the malaria was cured

Mr WANSEY BAYLY described a case in which a dramatic apparent cure of general paralysis followed a course of malaria

Dr W. D. NICOL spoke of experience of the treatment at Horton Mental Hospital Many patients with general paralysis of the insane had improved greatly The paranoid patients reacted worst

Dr S C WOODHOUSE spoke of the blood and cerebro-spinal fluid picture in cases of tabes, and Dr J. G GREENFIELD referred to the inflammatory reaction in the brain after malarial treatment

Dr SHARPE and Mr C H MILLS also joined in the discussion

EDINBURGH MEDICO-CHIRURGICAL SOCIETY

AT a meeting of this Society held on May 4th Dr A NINIAN BRUCE read a paper on the

Treatment of Locomotor Ataxia

with special reference to the ataxia Locomotor ataxia or tabes dorsalis was, he said first clearly defined as a separate clinical entity by Duchenne, of Boulogne, in 1841–51, and much speculation and controversy took place before it was established that it was due to a syphilitic infection of the nervous system. It is now known that the lesion affects the posterior sensory nerve-roots, and that the optic nerve is also liable to be involved. As the spirochæte limits its attack so largely to the sensory fibres, the resulting symptoms tend to be purely sensory, and it is thus important to realise that apart from impulses of pain, touch, heat, and cold which pass centralwards by this pathway and reach consciousness, a very large group of sensory impulses also utilise this pathway but remain at the physiological level, and thus do not enter consciousness; they are concerned with the maintenance of posture and equilibrium and such fibres arise from the tendons, muscles, and joints.

Apart from blindness, said Dr. Bruce, ataxia is the most serious symptom from which a tabetic may suffer as it deprives him of his power of locomotion; it is also a symptom which tends to progress and ultimately leaves the patient in a bed-ridden state. In fact, tabes is often divided into three stages (1) the pre-ataxic, (2) the ataxic, and (3) the paralytic, depending entirely upon the progress of the ataxia. It is interesting to note that many observers have drawn attention to the fact that a tabetic who is blind is not ataxic, and that the development of blindness in an ataxic man usually results in the disappearance of his ataxia. Tabes is not a lethal disease and does not necessarily affect the average duration of life to any great extent. Involvement of the posterior sensory root in tabes results in an interference with postural information passing centralwards and thus leads to a disturbance of reflex action. This delay and diminution of postural stimuli creates confusion in the pathways of nervous integration and the information reaching the end-stations is misleading. Endeavour is then made to counteract the errors by vision, and information of posture is obtained through the visual pathway. This, however, is a much more complicated mechanism than the one based on purely postural images which has been thrown out of gear. The replacement of a physiological mechanism by a more complicated one involving consciousness is inefficient and leads to fatigue. At the same time the misleading postural images are repressed and the new visual mechanism, becoming more and more complex and fatigued, leads to muscular incoordination and ataxia. This inexplicable symptom rapidly progresses; the more the ataxic tries to walk, the worse he becomes. Mental demoralisation and chaos set in, he surrenders to what he regards as the inevitable, and is usually stated now to have reached the paralytic stage. Walking was originally learned from visual images, and it is only later when postural images are established that visual images are discarded. A good pianist keeps his eyes fixed on the music, the fingers wandering up and down the keyboard controlled only by postural images.

The treatment of ataxia, went on Dr. Bruce, consists in relearning the use of postural images; visual images may require to be cut out by blindfolding the patient. That postural images may be cultivated to a high degree is shown by acrobats and tightrope walkers. They are best relearned by first creeping until this can be done with ease, and then kneeling and walking on the knees. When this is learned it may be followed by standing supported and unsupported, by various muscular movements and exercises, and finally by walking, by going up and down stairs, and by all the other muscular movements required in daily life. The mental relief obtained is enormous. A pre-ataxic case, properly handled, need never become ataxic. To a large extent, therefore, the proper treatment of tabes really closely resembles that of syphilitic neurasthenia, and the disease itself may be more correctly regarded as syphilitic neuritis of the posterior roots. The condition illustrates well the fact that organic disease may produce functional nervous symptoms, which, when once developed, may steadily progress, although the organic lesion itself may remain more or less stationary.

Reviews and Notices of Books.

MODERN MEDICINE:

Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by Sir WILLIAM OSLER. Third edition. Thoroughly revised and re-edited by THOMAS MCCRAE, M.D., assisted by ELMER H. FUNK, M.D. Vol. IV., *Diseases of the Respiratory System; Diseases of the Circulatory System.* London: Henry Kimpton. 1927. Pp. 1011. In sets of six volumes only. £12 12s.

THE publication of a third edition of this well-known system of medicine is a sign of its established reputation. It is a sign, too, of the rapidly changing times which make even works of reference quickly out of date. This fourth volume on diseases of the respiratory and circulatory systems covers a thousand pages, and does not include chapters on lobar pneumonia and pulmonary tuberculosis, which very properly are treated in another volume. A standard work of medicine, the authors of which must plod solidly through the systems, can hardly be expected to attain to the same level of excellence throughout. This volume is no exception. The section on bronchiectasis, for example, is disappointing, even when allowance is made for the obstinacy of this particular task. The bacteriological aspect of bronchiectasis and the clinical classification are dealt with too briefly, whilst the value of the radiogram, of lipiodol, and of the newer surgical operations receives no special mention. At the beginning of the section on respiratory diseases there is a useful summary of the physiology of respiration which serves as a good introduction to the first part of the book. The phenomena of cyanosis are not all specified here, though the admirable work of Lunsgaard and Van Slyke on this subject is adequately discussed under congenital cardiac disease. In a subsequent edition a short section on the clinical examination of the normal chest in the light of what modern radiography has taught us might well be inserted. The chapter on the phenomenon of hypersensitiveness including protein sensitisation, hay-fever, and asthma, is a good exposition of a subject which must have been difficult to condense into 30 odd pages.

The second part of the book on diseases of the circulatory system contains two quite brilliant chapters. The first of these is on the rate and mechanism of the heart-beat by Sir Thomas Lewis, and the other on congenital cardiac disease by Dr. Maude E. Abbott. The former is a full and lucid account of a subject which gives much anxiety to the practitioner. It is not overburdened with the technicalities of the electrocardiograph or with baffling formulæ and diagrams, but is clearly and simply written. It contains, furthermore, a helpful summary of the new work on quinidine. The chapter on congenital cardiac disease occupies one-fifth of the whole book and is not a page too long. It is indeed a really excellent monograph on the subject, one which goes far to make Vol. IV. of this system of medicine a standard work. A general survey of the plan of the volume leads one to the conclusion that the pathology in most sections is condensed into almost too small a space, notably in matters bacteriological. Treatment, moreover, looms none too large, and this is dangerous in so far as the student is only too ready to believe that diagnosis is the end and aim of the physician. This last criticism might be applied to many modern text-books of medicine—a sign of a transition period which marks the passing of the art of symptomatic healing and the birth of the science of accurate differential diagnosis with its accessory instruments and laboratories. The borderline where treatment becomes surgical especially deserves fuller discussion than is here given. Nowadays the physician must be sufficiently conversant with surgical procedure and practice to cooperate intelligently with the surgeon.

In general this fourth volume can be confidently recommended as a good summary of modern medicine in the particular subjects with which it deals, and we look forward to the completion of a work on which many students and practitioners have learnt to rely. A last word may be a plea for a stronger binding for a reference book which will so often be taken from the shelf.

MANUAL OF MEDICINE.

Third edition. By A. S. WOODWARK, C.M.G., O.B.E., M.D., F.R.C.P., Physician, Lecturer on Medicine, and Dean of the Medical School, Westminster Hospital. London: Humphrey Milford, Oxford University Press. 1927. Pp. 513. 15s.

SINCE the second edition of this well-known manual was published in 1920 various advances in medicine have necessitated alterations and additions to the text; but the size of the book remains substantially the same and it can still claim to be a "manual." In the section on the liver van den Bergh's test is described, but catarrhal jaundice is still left under the misleading heading of "gross obstruction of the common bile-duct." Cholecystography is mentioned in the diagnosis of gall-stones, according to many observers, the oral method is not so unsatisfactory as is here implied. The use of lipiodol in the diagnosis of bronchiectasis is described, and insulin treatment is well discussed in the section on diabetes. A good account of the pathogenesis of asthma is given, without undue emphasis upon protein hypersensitiveness. Some portions of the section on the heart are disappointing; no mention is made of "circus movement" in the pathology of auricular flutter and fibrillation, and quinidine is too valuable and interesting a drug to be dismissed as "gr. v, t.d.s." Apart from these small points the book shows signs of careful revision, and remains an excellent guide to medicine.

SURGERY.

Manual of Operative Surgery. Sixth edition. By Sir HOLBURT WARING, M.S., B.Sc., F.R.C.S., Surgeon to St. Bartholomew's Hospital; Examiner in Surgery, University of Oxford. London: Humphrey Milford, Oxford University Press. 1927. Pp. 868. 18s.

Sir Holburt Waring has thoroughly revised this latest edition of his work. Its good reputation should be further enhanced by improvements and additions, and by the deletion of accounts of obsolete methods. It is a really good practical text-book of operative surgery; the author has made it more than a compilation by drawing upon his long experience to advise on the choice of operation and to comment on the results he has found to follow the different procedures. We see how his process of selection has taken place, for instance, in the section upon cleft-palate, where all reference to the Davies-Colley operation has been omitted, a decision with which most surgeons will agree. On the other hand, implantation of the ureters into the rectum in ectopia vesicæ can give brilliant results and is worth consideration in a book of this kind. It is interesting to note that the author favours a somewhat lateral intracranial approach to the pituitary body.

The diagrams illustrating lymphatic drainage and the principles upon which malignant surgery of the different organs should be carried out are particularly helpful in this edition. There is also a useful description of general surgical technique and theatre appliances, to which the author has devoted considerable attention.

Surgical Applied Anatomy. Eighth edition. By Sir FREDERICK TREVES. Revised by C. C. CHOYCE, B.Sc., M.D. Edin., M.B., F.R.C.S., Professor of Surgery in the University of London, Surgeon to University College Hospital. London: Cassell and Co., Ltd. 1926. Pp. 727. 14s.

THIS classical manual on surgical anatomy has been thoroughly revised and brought up to date by Prof. C. C. Choyce. It has been deservedly popular in the past, and is likely to become more so in the future. It will be particularly acceptable to the senior student, since it combines the outlook of an anatomist and the views of a surgeon. It is complete and exact in its statements, full of really useful diagrams, easy to read, and contains the kind of information which is often very difficult to find. The book is, perhaps, a little long for the ordinary student to read right through, but it is not easy to see how any portions or even paragraphs could have been omitted. It is one of the best treatises on surgical anatomy available to English students.

FOOD VALUES.

For Calculating Diabetic and Nephritic Diets. Calculated from Bulletin No. 28, U.S.A. Department of Agriculture. By LOUISE M. KEEGAN, University of Chicago Dietitian, Polyclinic Hospital, New York City. New York: The Macmillan Company. 1926. Pp. 106. 7s.

Food Values and Recipes for Diabetics. Second edition. By S. MILLER, M.D., and F. B. SMITH, M.D. Belfast: R. R. Browne and Co. 1926. Pp. 23. 2s. 6d.

THE composition of foods, though such an important branch of medical science, is little studied in this country in comparison with Canada and the United States of America. The most complete publication on the subject is Bulletin No. 28 of the U.S.A. Department of Agriculture, for which Attwater and Briant are responsible; practically all the books of food values which have been published are based on their figures. The information in the Bulletin is so voluminous that it is necessary to issue some sort of abridged version—for example, that no less than 57 portions of beef are analysed is quite sufficient to confuse the ordinary person, especially as he is unlikely to be able to identify the joints referred to. Miss Keegan has considerately reduced the portions of beef to 20. The protein content of these varies from 14 to 24 g. per 100 g. of meat (average value 18 g.). The fat varies from 3 to 28 g. per 100 g. (average 16 g.). Even for the abridged tables considerable knowledge of the different joints of meat is required. If it is necessary to record the exact amount of protein and fat in the diet, very accurate tables of this type are essential. In most of the big hospitals in Canada and U.S.A. a special kitchen is established with one or more skilled dietitians in charge; it is thus possible to ensure the control within narrow limits of the number of grammes of protein, fat, and carbohydrate consumed by any patient. Miss Keegan's tables are well adapted to serve this end; it is possible with their help to give to patients in hospital much variety without altering the essential composition of their diet by more than a few grammes. Whether the patients who have left hospital will even after careful training have the ability or indeed the knowledge or the time to worry over the difference between a sirloin of beef and a porter-house steak is another matter.

The tables prepared by Dr. Miller and Dr. Smith are suitable for a very different type of patient. Thus in one table the food values of beef, lamb, mutton, pork, and veal are all classed as identical, though in the full tables three kinds of beef are given, one of lamb, two of mutton—all varying slightly from the group figure. For the skilled dietitian these tables are valueless, but for the average diabetic patient in England they should suffice, though it would be of assistance if the caloric values were also given. Incidentally nearly all the English tables omit this information, which is supplied in American tables as a routine. Dr. Miller and Dr. Smith have given all their food values in terms of 1 oz. This form of notation is convenient, but does not make substitutions so easy as the alternative scheme, first put forward by Dr. O. Leyton, of giving the weights of the different foods which contain 5 g. of carbohydrate. It is, for example, easy to substitute raspberries for grapes without doing any of those calculations which many patients are incapable of grasping. In a future edition this notation should be adopted by Dr. Miller and Dr Smith, since the intelligence of patients varies greatly, and many elderly women are incapable of doing even division sums without much trouble In other respects patients will find the tables easy to follow, while the recipes given will be most useful to those whose diets have to be strictly controlled

To those who are sceptical of the need for such detailed instructions we would point out that in the future even the most hardy among us may be encouraged to choose his meals on this plan; in certain restaurants in New York already the caloric values of the different dishes on the menu are set out so that the hungry man can know which gives the best food value.

THE SHIP-SURGEON'S HANDBOOK

Third edition By A VAVASOUR ELDER, D S C, M R C S, L R C.P, Surgeon Lieut-Commander, R N V.R London · Baillière, Tindall and Cox 1927 Pp 523 10s. 6d.

THIS book will prove of great value to doctors going to sea for the first time in medical charge; it will keep them out of many difficulties, professional and social They will find it easier to use a microscope on board than the author allows, indeed, a microscope must be carried on some foreign liners for the diagnosis of malaria, plague, and typhoid fever Much helpful detail is given for managing a case of sea-sickness, though the treatment advocated in the closing summary is frankly expectant Good advice will be found here for practitioners who wish to send their patients for voyages, due regard being paid to the diseases from which these are suffering or recovering, and to the voyages appropriate to each season. The author holds that doubtful cases of pulmonary tubercle may be sent on short voyages, that early cases do better in sanatoriums and that there is no place for advanced cases on board ships owing to the great risk of hæmoptysis The chief anxiety of ship-surgeons at the moment seems to centre round the immigration officer, who is only to be disarmed by frankness and accurate papers The author has good words to say even for Ellis Island, and suggests that the minute examination of British seamen at New York, of which so much was heard a year ago, was initiated because so many seamen were deserting and so many fraudulent and unfit immigrants were being clandestinely received into the United States A striking paragraph (p 411) describes anew the old seafaring disease, of which we have heard no mention for years, called calenture The sufferer from calenture has the temporary delusion that the sea is a green field, full of flowers so clearly seen that the patient may even go overboard to pick them

INTERNATIONALE RADIOTHERAPIE

By Dr. J WETTERER Darmstadt. L C Wittich 1925–26 Band I. Pp 1056

THE author has set himself the task of bringing into a single volume abstracts of the international literature on radiotherapy for 1925–26, and further volumes are projected if his labours meet with an adequate response Those who are in touch with the present position of radiological treatment and its developments are aware of the need for such a book, the subject being one which can hardly be covered at the present moment by any text-book

Dr. Wetterer's abstracts have been fully and conscientiously made The details of technique and statistics of results have been carefully given without undue condensation, and his work is thus most valuable for reference Dr Wetterer deserves praise for the enthusiasm which has enabled him to carry out so vast a task. We would suggest in future editions the index of authors should include their initials It may be hoped that English radiologists will coöperate to the utmost with Dr. Wetterer in supplying him with published material, as he is endeavouring to make the volume in the fullest sense international

A TEXT-BOOK OF EMBRYOLOGY.

By H E JORDAN and J E KINDRED, of the University of Virginia London and New York: D. Appleton and Co 1926 Pp 613 25s.

THIS book differs from the ordinary students' book on the subject in scope and detail Among its best features are the chapters and sections given to general considerations, such as sex-determination and recapitulation These are well and clearly put, and give a fair and just conception of the points at issue The majority of the illustrations are good, but some are crude and of little value as exponents of the text. The histological details of structure and formation are a prominent and good feature The treatment of the general subject matter of the book itself does not rise in any way above the ordinary level; on some points the authors are not in agreement with what is usually taught in this country to-day. More attention might, with advantage, have been paid to correction of proofs and verification of references; in this connexion we may point out that Prof Thomson's papers on the ovum appeared in the (English) *Journal of Anatomy* in 1919

The book is clearly printed and well produced, and has at its end a chapter on laboratory work, in which are some excellent figures of sections of embryonic stages in certain lower animals.

MONOGRAPH ON BIOCHEMISTRY.

Lecithin and Allied Substances: the Lipins. Second edition. By HUGH MACLEAN, M D, D Sc, Professor of Medicine in the University of London, St Thomas's Hospital; and IDA SMEDLEY MACLEAN, D.Sc, F I C London. Longmans Green and Co, Ltd. 1927. Pp 220. 10s 6d.

THIS volume of the well-known series of monographs on biochemistry deals with the lipin side of the chemistry of the fats, and with their biological significance Together with the monograph on the fats by Leathes and Raper it forms a complete and up-to-date account of these problems Fortunately for students and others the authors have followed the same system of nomenclature as did Leathes and Raper, and the monographs can thus be read together with profit

The book is divided into seven parts, the first of which introduces the subject with an explanation of the nomenclature and a classification of the lipins The several groups of lipins are then dealt with, together with those alleged lipins upon whose constitution there has been so much controversy. Plant lipins are also discussed, but perhaps to the general reader the most interesting section is that dealing with lipins from the biological standpoint. Here the authors have reviewed the effect of injecting lipins into the blood, the part played by the lipins in the coagulation of blood, and more fully, the function of lipins in fat metabolism The last named section is also one of particular interest In this edition the chemical side of the work has been brought completely up to date; it is noteworthy that the recent work of the American school, headed by Levene, on the structure of lecithin and kephalin, has been included.

FIFTH AVENUE HOSPITAL CLINICS.

First series New York: Paul B Hoeber, Inc. 1927. Pp. 336 $5.

IT is the custom for the staff at the Fifth Avenue Hospital, New York to meet twice a month At these meetings, which are open to all the practitioners and nurses of the city, papers are read and hospital material discussed. The reports of these meetings, together with reprints of some articles published in connexion with cases in the hospital, have been compiled into a book which it is hoped to publish annually. This first number, beautifully produced and illustrated, contains some 26 articles and over 60 photographs and illustrations The range of subjects is large and the standard uneven. An interesting account of the dietary arrangements of the hospital by Sarah Hickcox, the "supervising dietitian," is included, also a good symposium on thyroid gland diseases The "attending oral surgeon" contributes an account of the oral department, and concludes with a plea for closer cooperation with other departments Dr E J Rhodebeck gives a preliminary report on a study of urea feeding. One glaring set of misprints is unfortunate In an account of the discovery of insulin there is mentioned several times a "Dr McCloud," presumably intended to denote Prof McLeod The volume contains many interesting discussions of cases and of special points of surgical technique or pathology.

MOTHER AND UNBORN CHILD.

By SAMUEL RAYNOR MEAKER, Associate Professor of Gynæcology, Boston University School of Medicine London Baillière, Tindall and Cox Baltimore Williams and Wilkins Company 1927 Pp 207 11s 6*d*

THIS is an excellent little book of information and advice for the prospective mother It is well written, packed with sensible suggestions, and easy to understand It is to be hoped that its price, which is by no means excessive considering its value, will not prevent the middle-class prospective parent from purchasing it The earlier chapters are concerned with anatomy and physiology, the development of the fœtus is traced and then the signs and symptoms of pregnancy discussed In a very good chapter on the prediction of the baby's birthday and certain other predictions there are sections on heredity and maternal impressions which serve to clear away a lot of mediæval superstition, still persisting to a surprising degree among intelligent people The hygiene of pregnancy and certain troubles and discomforts are dealt with next in a sound fashion; the rest of the book on the arrival of the baby, the management of the new-born child, &c, is on orthodox lines. A special word of praise must be given to the chapter on the lying-in mother, this stage of maternity is too often neglected in a book of this nature, the mother being scarcely mentioned after the baby is safely born The author wisely remarks, "the ideal end-result in obstetrics is a normal baby and a perfectly healthy mother" It is only by a careful attention to the care of the mother during the puerperium that many gynæcological complaints can be avoided Advice to the mother as to the part she must play in this important and often difficult time is set out in this book more fully and clearly than in many a text-book of midwifery

HEALTH SUPERVISION AND MEDICAL INSPECTION OF SCHOOLS

By THOMAS D WOOD, A M, M D, College Physician, Adviser in Health Education, and Professor of Physical Education, Teachers' College, Columbia University, &c; and HUGH GRANT POWELL, A B, M D, Lecturer and Assistant Physician, Teachers' College, Columbia University London and Philadelphia W B Saunders Company, Ltd 1927. Pp 637. 35s

As the work of the school medical service involves little specialised medical knowledge, but mainly the application of the common stock of medical knowledge to the problem of the school-child, books on the subject naturally concentrate on the social and administrative questions which arise in this branch of public health effort The book follows this path The authors are thorough in their treatment of the problems involved and something—usually a great deal—is said about almost every difficulty which the school medical officer may encounter in his day's work Unfortunately, the social ideals and legislative and administrative procedure in America are peculiar to that country, and therefore much that can be read in this book, although interesting, is of little practical value on the eastern side of the Atlantic The authors have evidently confined their study to the writings of their own nationals and the book does not appear to have been prepared for foreign consumption As an example of the publisher's art it falls somewhat short of the usual high standard, and the style in which it is written is not very attractive It may well be, however, that the numerous examples included of forms and documents used by different States and towns in connexion with school medical work will be useful to those who are engaged in this branch of the public health service, and that they will find a good deal of pertinent matter dotted through the book

Reports and Analytical Records.

VITA-WEAT CRISP BREAD

(MANUFACTURED BY PEEK FREAN AND CO, LTD, LONDON, S E 16)

"Vita-Weat" claims to be "all the wheat nothing but wheat" and to be made from 100 per cent stone ground whole wheat The process of preparation is said to preserve all the vitamins, a statement which is probably correct so far as "B" is concerned as this is the most thermostable of these bodies Sir W Arbuthnot Lane has reported that the 100 per cent "whole wheat English crisp bread now being made in London contains just such materials as are absolutely essential to a vigorous condition of health" On analysis the following results were obtained —

Carbohydrates consisting of starch, altered starch, sugars natural to wheat, hemicelluloses, &c	71 00	per cent.
Protein	10 32	„
Moisture	4 90	„
Ash	2 60	„
Fat	7 90	„
Fibre	3 28	„
Caloric value per lb	1846	

The matter soluble in cold water amounts to 17 8 per cent, of which 2 8 is sugar derived from the wheat Since wheat contains from 2 to 3 per cent of fat it is evident that some other fat has been added during preparation It will be noted that the caloric value is high The crisp bread has a pleasant texture and flavour; it is undoubtedly a valuable foodstuff, more particularly in respect of its content of vitamin B, the deficiency of which in white bread and preparations of white flour is causing concern in medical circles

BEEFEX.

(BEEFEX, LTD, 19–20, WEST SMITHFIELD, E C)

This preparation is of a fluid consistency, dark in colour, and with a salty meat-extract flavour When analysed the following results were obtained —

Water	34 9	per cent
Total solids	65 1	„ „
Consisting of mineral matter	20 8	„ „
Meat fibre and coagulable proteins .	3 76	„ „
Albumoses and peptones . . .	8 57	„ „
Meat bases . . .	24 16	„ „

Out of the total of 20 8 per cent of mineral matter, 12 per cent was found to be sodium chloride The preservatives salicylic and boric acid were tested for with negative results The analytical results are consistent with those of a concentrated meat extract

THE LANCET.

LONDON, SATURDAY, JUNE 11, 1927

HE PREVENTION OF DIPHTHERIA IN LONDON

ST year, in addressing the Institute of Hygiene,[1] J D Rolleston drew attention to a tendency ie medical profession to regard diphtheria as ie down grade, whereas in London the disease in point of fact, shown a steady increase ig the past 15 years In the weekly returns of the strar-General and of the Metropolitan Asylums d the toll that it takes in sickness and death stands is heavier than that of any other complaint save les and pneumonia. The same is true for the al city of Canada where, though the case incie of diphtheria has been almost stationary for some s, the mortality-rate has risen sharply during the 8 months, as is shown in the figures given by Dr B NAH and Dr L M Murray from the Toronto River-Isolation Hospital[2] Yet in New York diphtheria exhibited a marked decline in recent years In city, since 1916, over 630,000 children have been d by the Schick method and more than 400,000 been immunised To this Dr Rolleston ascribed significant difference in the attack-rate, agreeing the chief medical officer of the Ministry of Health, in his report for 1925 states that "as antitoxin proved itself the best method of treatment, so unisation appears to be our best prophylactic" Ministry is so satisfied with this line of treatment prevention that it has determined to urge its tion by local authorities, but the largest of these, London County Council, despite the report on e immunisation against diphtheria, drawn up t by Dr J Graham Forbes, decided in October, , not to introduce toxin-antitoxin treatment into cheme for the care of school children and has ered since to this decision Dr Forbes's report in nded form has now been published by the Medical arch Council.[3] His figures show the incidence nortality of diphtheria to be higher in London than y other large city in Great Britain and higher that of almost any other European capital.

tween the years 1921 and 1925 there were 65,000 in London, some 4000 of them fatal, the death- being nearly 1 per 1000 of the child population r 15 Dr Forbes's charts and maps show that se relationship may in some areas be traced een the incidence of diphtheria and the density pulation and the degree of overcrowding The on municipal authorities have made little ess in promoting active immunisation; until recently Holborn was the only borough in which was any provision for it Special clinics were d last year for testing and immunising in minster and Camberwell, and this year in ord, but Holborn alone has figures to show ts work among the children under the care guardians at Mitcham In 1921 there were ses in one school of 600–700 boys, in 1922 were 32 cases, and in that year testing started, when 30 per cent were found to be positive, and of these over two-thirds (380 boys) were immunised In the year 1923–24 there was one case of diphtheria in these schools, in 1924–25 there were none, in 1925–26 there were two—being children whose parents had refused consent to immunisation In the infirmary, where immunisation was not carried out, there were 12 cases in 1924–25 and 19 cases in 1925–26 Other institutions were found to yield equally striking figures Dr Forbes surveys the whole country and gathers further figures from Europe and America The evidence is cumulative, although he is content to state that it "appears sufficiently convincing to justify the experienced opinions of all who have devoted much study to the problem, and hold that the Schick test and immunisation constitute one of the most notable advances in the sphere of preventive medicine" The problem, as he says, calls for the closest coöperation between all the authorities concerned Both toxin and toxin-antitoxin must be accurately standardised and must be derived from a trustworthy source The testing demands an exact technique and experience in reading results, but in the hands of a trained observer is simple and harmless Dr W H Park[4] was able recently to cite over 2,000,000 injections in the United States without ill-result Dr Forbes wisely lays emphasis on the necessity for using every possible precaution in the preparation and use of the material

The duration of immunity following a toxin-antitoxin injection appears to be at least six years, a period which will tide the child over the most susceptible time of its life Since immunity develops slowly after inoculation, taking six months or more to reach its acme, it is idle to postpone the measure until the disease becomes epidemic or the child has already come into contact with infection, although an immediate temporary protection, lasting about three weeks, can be secured by a small dose of antitoxin. The occasional occurrence of diphtheria in a Schick-negative individual, or in one who has been immunised, cannot be denied, but there is no doubt that the great majority of inoculated children are efficiently protected and that the very small percentage who develop the disease have it in a mild form The preventive measures recommended for London include an organised campaign by the controlling authorities, instruction to nurses, teachers, health visitors, maternity and child welfare workers, and the establishment of school clinics and special clinics at welfare centres and hospitals Since the disease falls more heavily on the children under 5 years of age, the work among mothers of infants is at the heart of the campaign The estimated cost of protecting all those now on the school rolls is between £85,000 and £100,000, which may be set against the actual cost of diphtheria to London ratepayers in the year 1921, which was estimated in the neighbourhood of £500,000 The sum of £30, which is what a diphtheritic child costs London, would protect 200 children from contracting diphtheria The Edinburgh public health department has been able to test and protect (if necessary) nearly 10,000 children for an expenditure in material of about £900 Dr A Joe remarks[5] on the willing response of the Edinburgh parent and the recent development of the campaign among the pre-school children It is not usual for London to fall behind other cities in matters of public health or child welfare, and the publication of Dr Forbes's report by the Medical Research Council will, we hope, be sufficient to secure appropriate action.

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[1] Jour. State Medicine, 1926 xxxiv, 187.

nadian Medical Assoc Jour, February, 1927 p 187

dical Research Council, Special Report Series 115 H.M. Stationery Office

[4] New York State Med Jour, 1926, xxvi. 347

[5] Edinburgh Medical Journal, June, 1927

TRADITION IN MEDICINE

The influence of tradition over social progress can be illustrated in many fields by the consideration of medical history A small volume by Dr Bernhard J Stern,[1] emanating from the Faculty of Political Science in Columbia University, sets out to demonstrate how far this mode of reasoning can be employed, and although it is intended that its pages should be read in the light of previous sociological studies issued in the same series and dealing with social factors of a more conservative nature than the science of medicine ever can be, the fundamental questions put by Dr Stern show how well medicine can be made a chosen field of inquiry Premising that the term culture is used throughout the book as the equivalent of social heritage—that is of accumulated knowledge—he asks to what extent and why are innovations or changes in culture resisted, and what are the psychological and sociological factors involved He proceeds to consider these questions, and others arising directly out of them, in two ways, using the history of medicine for the source of his examples, first by an inquiry into the circumstances which retard the dissemination of new learning, and second by an examination of the various steps by which medicine has progressed These make tremendous subjects for discussion in one slender volume, but by the help of copious and detailed references the ground is fairly surveyed in a superficial manner, with excellent indications for more intensive study

The factors involved in retarding social change are mainly psychological, as Dr Stern recognises, and in emphasising the influences of persistent habit reactions, of the desire to avoid unpleasant situations, and of the fear of the unknown, he furnishes a criticism of common social procedure which is of definitely medical application Threats to economic vested interests, which he next discusses, can hardly be said to have played much part in medical developments, but in this section he treats of the power of tradition, as it is manifested in reverence for authority, leading to unwillingness to analyse new claims or to subvert recognised teaching Here all must see the pertinence of his arguments to the development of a science, and here the author makes a brave attempt to interpret the status of medicine as a science He emphasises the difficulties exemplified by various conflicts in medical theory and medical practice, where each side has been taken with equal vehemence by authorities who, he appears to assume, have been of equal competence The assumption, of course, begs the question, for in most of the necessary differences of opinion which have been manifested in the developments of progressive science the opponents were not actually of equal competence; they only appeared to be so because they were vested with equal academic authority or had been engaged in equally important researches Individually they were not equated The officials of the learned society who declined to accept clinical cases from Thomas Addison in illustration of his discoveries were not of equal competence with the discoverer, though they appeared to be, and while temporarily they may have impeded the dissemination of his views, the truth prevailed, as it will The opposition to Harvey's theory of the circulation of the blood was endorsed by many famous anatomists, but the mere fact that the attempts to confute him did not take the shape of anatomical demonstrations proves—unless we are to assume deliberate cowardice and chicanery on the part of a group of learned men—that Harvey's arguments were not really understood When they were grasped opposition ceased Similarly, Lister's main opponents in London, though standing in professional repute and by academic degrees on the same plane which he occupied, were in no sense his intellectual equals The opposition to Lister is not accurately described by Dr Stern, but it forms an excellent example of the power of tradition in the working, for the resistance to innovation was based upon the reasoning of persons who, being themselves badly informed, were betrayed into illogicality. The opponents of Lister seized upon minor errors in technique, forgetting that no innovation when first presented is entirely perfect, but the cavilling criticisms were not long effective in obscuring and discounting the importance of the discovery, or in delaying its acceptance, or in perpetuating the ancient procedures

Dr Stern concludes with a very just criticism of medical history as it at present exists, namely, that it is too much a study of biographies, so that individuals who have contributed to the development of medicine are removed from their scientific background and given an exaggerated importance While all can see that progressive changes may start with the activities of gifted individuals, the measure of their responsibility is not clear in many of the places where their names remain in association with the reform We ought to consider how far these changes might have occurred without the work of those who are accredited with the discoveries, and how far each man builds on the accumulated knowledge of others As a commentary on this possibility he gives a list of multiple discoveries and inventions in the history of medicine, which is of melancholy interest in recalling many wrangles over priority The list has been compiled from the writings of many authorities, and, although not perfect, records ample proof of the frequency with which great minds in medicine have thought alike And how should it be otherwise, considering the common training which their minds have received, and the common nature of the problems which life places before them?

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PERINEAL PROSTATECTOMY

In few branches of surgery has so much advance been made within recent years as in the treatment of the hypertrophied prostate The removal of adenomata of the prostate, from being an operation associated with grave risk to the patient, has become a relatively safe procedure in the hands of the experienced urologist The dangers of death from uræmia, shock, hæmorrhage, sepsis, and heart failure have been reduced to the minimum by diligent preoperative preparation, scrupulous care on the operating table, and thoughtful after-treatment Long series of operations by the suprapubic route with an almost insignificant mortality are reported by leading urinary surgeons in this country, and the results have been so good that there seems to be little need for the development of a different technique It was with great interest, therefore, that on May 23rd the Royal Society of Medicine welcomed Prof Hans Wildbolz, of Berne, who read a paper in the Urological Section upon the results of 300 prostatectomies by the perineal route He attributed his good results—0 5 per cent. of deaths—to careful study of the condition of the patient before operation and to the employment of a particular technique He does not advocate operation in the early stages of prostatic hypertrophy, as he does not think it fair to expose the patient to the slight risk entailed unless the prostatic enlargement has reached a degree at which the kidneys are suffering from back pressure or infection has taken place. Death from uræmia has been abolished almost completely by carrying out renal efficiency tests, but Prof. Wildbolz warns his colleagues against too implicit a trust in the test. Results which show that considerable damage to the kidney has taken place are not always incompatible with a successful issue; it is better, while bearing in mind the results of efficiency tests, to depend upon clinical acumen or intuition to determine whether operation should be undertaken or not. He related the history of a patient which showed well that no case, however bad, should be regarded by the surgeon as hopeless. The man was admitted to hospital in uræmic coma with convulsions; he had overflow incontinence, 260 mg. of urea in 100 c.cm. of blood, and an arterial pressure of 180 mm. Hg. Drainage was instituted, the symptoms of uræmia disappeared, the blood-urea fell to 140 mg. in three weeks and to 73 mg. in five weeks, and when it ultimately returned to normal a prostatectomy was undertaken successfully, the patient having remained well since. When preliminary drainage of the bladder is necessary Prof. Wildbolz prefers an in-dwelling catheter to the suprapubic opening, for the man with a suprapubic opening regards himself as an invalid and cannot get about his normal occupation, whereas with a catheter tied in he feels himself to be almost normal, and the weeks of waiting for the recovery of renal function are scarcely regarded by him as part of his illness.

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[1] Social Factors in Medical Progress By Bernhard J Stern Ph D London P S King and Sons Ltd , New York Columbia University Press 1927 Pp 136 9s

Prof. Wildbolz made an interesting remark on the changes in the level of the blood-urea following perineal and suprapubic operations. After a preliminary drainage of the bladder he has found that a suprapubic operation may be followed by an increase in the blood-urea of 60 to 70 mg. during the first few days, whereas only occasionally after the perineal operation is any increase seen; often, indeed, there is a diminution in the amount of urea in the blood. This fact, if confirmed, would be a strong argument in favour of the perineal operation over the suprapubic. The advantages claimed for the former are that there is less danger of lung sequels, owing to the fact that the anterior abdominal wall is not interfered with, less strain is thrown upon the heart, and there is less shock. It is also asserted that the bleeding at the perineal operation is less, the damage to the tissues is not so great, better drainage is provided, and healing is quicker. Of the 300 cases quoted 227 had healed within two weeks and 44 within three weeks. Hæmorrhage is more completely under control with the perineal approach, at all events when, as in Prof. Wildbolz's particular method, the end of the membranous urethra is sutured to the internal meatus of the bladder—a procedure which favours the obliteration of the prostatic cavity. The disadvantages of his method are the risk of injury to the rectum and incontinence of urine. The rectum was injured in 7 of the 300 cases, but in none did permanent ill-effect arise. Incontinence of some degree occurred in 11, but the loss of control was not complete and occurred only when the intra-abdominal pressure was suddenly raised, as in coughing or sneezing or during some violent exertion. In only five patients did it last longer than four months, and in all it finally disappeared. No stricture of the urethra occurred in this series.

The results of perineal prostatectomy as practised at the Berne Surgical Clinic are certainly remarkable, although compared with the best results from the suprapubic operation there seems to be little numerical advantage; expert operators, in fact, arrive at the same degree of success by either route. The suprapubic method requires less technical ability, and by this approach the patient is not exposed to the risk of that most distressing of all complications—incontinence of urine. There would seem, however, to be cause shown for exploring anew the possibilities of perineal prostatectomy.

Annotations.

"Ne quid nimis."

BIRTHDAY HONOURS

MEDICINE is represented in various categories of honours published on H.M. The King's sixty-second birthday. Dr. Edward Farquhar Buzzard becomes a Knight Commander of the Victorian Order, while a knighthood has been conferred on Lieut.-Colonel Louis Edward Barnett, C.M.G., professor of surgery in Otago University, and on Dr. Charles James Martin, C.M.G., F.R.S., Director of the Lister Institute of London. Sir Farquhar Buzzard's eminence in all branches of neurology has equalled his early prowess in athletics. Sir Louis Barnett is one of the founders of the College of Surgeons of Australasia and presided over the recent Australasian Medical Congress held at Dunedin. Sir Charles Martin's name is associated with large schemes of preventive medicine in many parts of the British Commonwealth, and under his guidance research has borne much fruit for 20 years at the Lister Institute. In the Victorian Order Mr. Henry Linnington Martyn, surgeon-apothecary to the Royal Household at Windsor, has been appointed Commander. Major-General John Macfarlane Sloan, C.M.G., D.S.O., late R.A.M.C., and Colonel Charles Pye Oliver, C.M.G., late Territorial Army, have been made Companions of the Order of the Bath, while Lieut.-Colonel John Cyril Holdich Leicester, I.M.S., lately officiating surgeon-general to the Government of Bengal, has been made Companion of the Indian Empire. In the Order of the British Empire the title of Knight Commander has been conferred on Mr. Charles Percy Barlee Clubbe, consulting surgeon, Royal Prince Alfred Hospital, and that of Commander upon Surgeon-Captain Alfred James Hewitt, R.N., Dr. Neil Morrison Macfarlane, P.M.O., Basutoland, and upon Dr. William Marshall Philip, lately M.O.H., Colombo Municipal Council, Ceylon. The rank of Officer in the same Order has been conferred upon Surgeon-Commander Guy Leslie Buckeridge, R.N., Dr. Attalio Critien, chief Government medical officer and superintendent of public health, Malta, Dr. Charlotte Elizabeth Ferguson-Davie, in recognition of services in the Straits Settlements, Major Charles Morgan Finny, R.A.M.C., Dr. Edmund Lloyd, of the Church Missionary Society, Sudan, Dr. John Randall Phillips, senior member of the Legislative Council of Barbados, Major John Heatley Spencer, R.A.M.C., and upon Captain Harold Williamson, I.M.S., while Kobad Dhunjibhai Mugaseth, a medical practitioner of Calicut, Madras, has been made a Member. The list of Commanders of the Order of the British Empire also contains the names of Miss Joanna Margaret Cruickshank, R.R.C., matron-in-chief of Princess Mary's Royal Air Force Nursing Service, whilst among the Officers are those of Miss Harriet Lassell, matron of the Kasr-el-Aini Hospital, Cairo, Miss Sarah Lovell, head nurse of the London County Mental Hospital at Claybury, and of Miss Eliza Grace Musgrove, matron of the Devon County Mental Hospital. Membership of the Order has been conferred upon Miss Bridie Maureen Copeland, Miss Mildred Shirley Low, superintendent health visitor and inspector of midwives in Warwickshire, and upon Miss Annie Newman, head nurse of the London County Mental Hospital at Horton. The Kaisar-i-Hind Medal of the First Class has been awarded to the Rev. Caleb Davies, a graduate in science and medicine of Manchester University, for his splendid work among the Santals, one of the aboriginal jungle tribes of Bengal. Other recipients of this Medal are Dr. Ethel Adelaide Douglas, medical officer in charge of the Kinnaird Women's Hospital, Lucknow, who has recently made a survey of medical needs for the National Christian Council of India, and Dr. Carl F. Kugelberg, of the Swedish Mission, Madras. On behalf of the medical profession we tender hearty congratulations to the recipients of all these honours, not forgetting Mr George Goodchild, clerk and steward of the Hereford County Mental Hospital, and Miss Georgie May Smith, general secretary of the Official Medical History of the War.

TRACHOMA IN HOLLAND

WHEN trachoma was first recognised among the people of Holland, about the year 1860, it was given the name of "the Egyptian complaint" on the assumption that it had been introduced by Napoleon's troops. This legend fails, however, to account for its special predilection for Jews, and in particular for those dwelling in Amsterdam. In a recent note to the Hygiene Committee of the League of Nations, Dr N M Josephus Jitta[1] suggests that the history of the disease, so far as we know it, is best accounted for by the immigration of Polish Jews into the Low Countries during the eighteenth century. Most of them went to Amsterdam, probably carrying trachoma with them. In those days the Jewish immigrants belonged to that social stratum which is chiefly attacked by trachoma, and constituted a class which had little intimate contact with its fellow citizens. This hypothesis explains many obscure facts.

It was about 1880 that Prof Gunning first raised the alarm and drew attention to the serious endemic among Jewish children, in one school 75 per cent of the pupils were affected, while in schools where the children were from equally poor homes, but not Jews, the percentage was less than 1. Dr Westhoff's report to a Commission in 1885 ended with the words, "If radical measures are not taken it may be stated that in another century our citizens will be like the Egyptians, who were part-blind and among whom nobody possessed normal vision." In consequence the municipality founded an ophthalmological clinic, school teachers were warned, and various public bodies attacked the social side of the problem. The number of cases gradually declined, and with advancing civilisation the conditions under which trachoma flourishes became rarer. Nevertheless in 1913 Dr Sajet calculated that there were 1400 persons in Amsterdam with active trachoma, and another 1120 in whom the condition was latent. In the same year the Municipal Council appointed a commission to inquire into the subject, and their report was published in 1924.[2] These workers examined all the trachomatous individuals and their families that they could find through the schools and clinics. They found 8 8 per cent of Jewish school-children and 0 6 per cent of others suffering from trachoma, and of these the great majority had no functional disturbance and had never had any treatment. To oculists accustomed to deal with grave cases this was naturally a shock. They found further that if the children were treated in this early stage they were cured quite easily and without corneal complications. Their charts show that most children are infected before their sixth year and that contagion at school is not an important ætiological factor. Thus the source of infection is essentially in the home, generally the mother. The provision of special schools would therefore be of little use in checking the endemic. In 1918 a special clinic was opened in the Jewish quarter, an oculist was appointed to inspect public schools, and untreated trachomatous children were forbidden to attend school. In 1921 results began to appear, and for the next two years the numbers attending at the clinic steadily declined. Moreover, of the 31 children classed as "cured" in 1922, only one had visual defect due to corneal involvement. The treatment at the clinic began with expression of the granulations under cocaine-adrenalin, together with firm massage to the extent of drawing a few droplets of blood. Silver nitrate or ichthargan was then instilled, and most cases were cured without admission to hospital. Dr. Jitta's note brings this story up to date. The diminution in cases has continued, so that in 1925 only 18 new cases were detected. It thus appears that 50 years of strenuous spade-work, patience, and perseverance have had their reward, and that Amsterdam has made it clear that where trachoma is not truly endemic, but imported, and maintained by conditions of poverty and dirt, it can be effectively combated.

RESISTANCE TO THE METASTATIC SPREAD OF CANCER.

ONE recent development of cancer research—viz., the experimental production of cancer by various forms of chronic irritation—dates from the well-known work done on spiroptera cancer by Prof Johannes Fibiger, of Copenhagen. Prof Fibiger has now published, in conjunction with Dr. P Møller, the results of an important investigation entitled Investigations upon Immunisation against Metastasis Formation in Experimental Cancer.[1] Twenty years ago it was shown that if a transplanted tumour underwent absorption the animal which had carried that tumour could not again be inoculated successfully with a transplantable neoplasm. This phenomenon was described as "immunity" or "resistance." The same condition could be induced by the injection of normal cells of the same species, embryo skin being a particularly active "immunising" agent. These observations naturally aroused great expectations at the time, because they seemed to offer the possibility of immunising an organism against cancer. It was soon found, however, that cancer spontaneously arose in animals which had been immunised. Since the number of cases in which this could be observed was for obvious reasons very small, it was necessary to test this important point again in animals in which cancer could be produced experimentally. The present paper records observations on 293 mice, which were tarred on alternate days for four months. Of these mice, 156 received injections of embryo skin emulsion during the process of tarring, while the remaining 137 mice were kept as controls. The same number of tar tumours appeared in both groups and at approximately the same time. This result confirms the earlier observations in showing that "immunisation" is no protection against the genesis of a new tumour. But when the formation of metastases in these experiments was examined it was found that in the immunised mice only half the number showed metastatic spread as compared with the control mice. In the latter group metastases were found in 58 per cent. of the cancerous mice, while the immunised mice showed metastases in only 30 per cent. of the cancerous animals. The authors make a special point of warning their readers against the premature therapeutic application of these results to human cancer. The nature of this process of immunisation is still very obscure, but the conclusion seems justified from these observations that in the metastatic spread of malignant cells the organism does not play merely a passive part, but is capable of offering an active resistance.

THE RELATION OF TEMPERATURE AND PULSE-RATE IN DISEASE.

THE introduction of increasingly trustworthy laboratory methods of diagnosis in febrile illnesses is said to lead to some degree of carelessness in clinical observation. There remains, happily, a host of careful clinicians who guard against this tendency themselves and check the medical student's besetting sin of piecing together reports. In the *Medical Journal of Australia* for April 2nd Prof D. W Carmalt-Jones, of the University of Otago, N Z, contributes an interesting series of clinical observations on the relation of temperature and pulse-rate in disease After illustrating the close correspondence between the pulse-rate and the temperature chart when both are plotted in acute infectious diseases, he emphasises the clinical significance which attaches to deviations from this rule It is assuredly true that though the clinical thermometer supplies a means of graphically recording the body's response to infection with a relatively small margin of error on the part of the observer, the pulse-rate will frequently give warning of grave complications, especially of a myocardial nature, which may be overlooked if the temperature chart alone is considered During the influenza epidemic of 1918, when cases were admitted to military hospitals in thousands daily, it was a common experience that selection for immediate special treatment of those patients who exhibited marked pyrexia was a very poor guide to the real gravity of the cases, whereas an experienced nurse could, by observation of the pulse-rate, pick out the more serious cases with a high degree of accuracy In surgical practice this aspect of clinical observation has long been recognised, a rising pulse with a falling temperature being, as Prof Carmalt-Jones points out, of the gravest significance In some hospitals it has been found that in cases of suspected spreading peritonitis the surest guide during the hours immediately following admission is to keep a record of the pulse-rate every half hour, without reference to the temperature, and on this indication alone early and successful operation has been performed at a time when the other clinical signs remained doubtful In more chronic pyrexial conditions it is as a guide to the condition of the myocardium that a pulse chart becomes most useful. In cases of good resistance in which recovery occurs without damage to the heart muscle, the pulse-rate falls with the temperature, and any delay in the fall of the pulse-rate relative to the temperature is in proportion to the myocardial damage done It remains to be recognised that pulse-rate records require more care on the part of the observer than do similar records of temperature Even a junior nurse will look twice at her thermometer, and possibly take the patient's temperature again, when the reading is in any way surprising, but we have again and again been struck by the unwondering calmness with which a normal pulse-rate is recorded by an otherwise skilful nurse in cases of heart failure, where only a proportion of ventricular pulsations is in reality reaching her fingers over the radial artery This is a point which seems to escape proper comment in many teaching hospitals, and it is one which Prof Carmalt-Jones might well have stressed in his paper In continental hospitals the daily volume of urine secreted is sometimes used as the most accurate index of the cardiac function, again, accuracy and simplicity of recording are the criteria which must decide the utility of the method, and again it must be admitted that, like pulse charts, urine charts are not as easy to obtain as are the more familiar records at the bedside.

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[1] Office International d'Hygiène Publique, Bull mensuel February, 1927, xix, 2, p 200.

[2] Wibaut and Smit. Annales d'Oculistique, vol. clxi.

[1] Kgl Danske Videnskabernes Selskab, Biologiske Meddelelser, vol vi, 1927.

THERMOPHILIC BACTERIA IN MILK

As our knowledge of bacteriology extends we are finding the range for bacterial growth, both in relation to temperature and to other environmental conditions, greater than was once supposed possible There are, for example, halophilic bacteria which flourish in solutions of salt, inimical for most bacteria Another interesting group is that of the thermophilic bacteria whose optimal growth temperature is well above normal body temperature and is generally in the neighbourhood of 55° C While this group is of no direct significance in human pathology, it is of some importance in commercial processes, particularly in relation to canned foodstuffs. In a recent paper[1] Miss Eckford discusses the significance of thermophilic bacteria in milk A distinction must be drawn between true or obligate thermophiles with a range of growth from 42° to 70° C and an optimal growth temperature of 50° to 60° C, and facultative thermophiles which grow best at 37° C or other lower temperatures, but which can also grow at 55° C Many of the common sporing aerobes, such as *B mesentericus* or *B subtilis*, can accommodate their growth to the higher temperature The author introduces a third group, the thermotolerant bacilli, which grow best at the higher temperatures but which can grow at blood heat All the strains studied from the Baltimore milk-supplies were aerobic spore-bearing bacilli Their ability to cause decomposition changes in foods depends on the extent to which they possess proteolytic and fermentative properties While most can liquefy gelatin and some produce acid from sugars, none caused gaseous fermentation and their proteolytic powers were absent or slight They are not likely to be a cause of decomposition changes in canned foods or to alter milk, although some of the isolated strains grown in milk at 55° C in pure culture were able to coagulate it They have some significance in connexion with pasteurisation, since they survive this treatment The obligate thermophiles were found not to multiply in milk at 62° C On the other hand, the thermotolerant types multiplied greatly at this high temperature and particularly at 55° C These strains, therefore, may cause trouble to pasteurising plants by multiplying during the process and giving the milk a high count They may cause pin-point colonies at 37° C Their existence is one of the causes of high counts after pasteurisation, a condition which occurs from time to time Sweetened and unsweetened canned milk tins were investigated but no true thermophiles were found in them The only organisms which developed at 55° C were bacilli of the mesentericus-subtilis group, This is in accord with the findings of J Weinzirl in U S A, although W G Savage and R F Hunwicke in England found obligate thermophiles in sweetened milk in a number of instances and one strain in unsweetened milk These strains were, however, unable to initiate unsoundness and were regarded as of no practical importance by their discoverers The only exception at present to the view that thermophilic bacteria are not a cause of decomposition changes in foodstuffs is the observation by E J Cameron and J R Esty (1926) of unsoundness changes from this cause in canned corn and other vegetables, giving rise to what they call "flat sour" spoilage

A COMPREHENSIVE STUDY OF POSTURE.

The subject of correct posture and of departures from it and their treatment has received far more attention in the United States of America than in this country, or indeed, in Europe generally. In the U S Public Health Reports this subject has been recently reviewed[1] by Dr Louis Schwartz, who gives a bibliographical list of 154 publications, beginning with the quaint "Anthropometamorphosis" by John Bulwer, of 1650, but not including some articles on the subject which have been published in the last year or two in our pages and elsewhere in this country Some orthopædic surgeons in the United States have attributed far-reaching pathological results to faulty habits of standing and sitting, and the existence of an American Posture League testifies to the place such matters occupy in the public attention In this country faulty posture is regarded as the result rather than as the cause of illness, and due to a general weakness and lack of postural tone in the skeletal muscles Too much, perhaps, has been made by some writers of the contrast between the spinal curves of the quadrupeds and anthropoids on the one hand and of man on the other. In a paper published in 1886 D J Cunningham showed[2] that these differences are not great. The lumbar curve was found to be present in a well marked form not only in chimpanzees, but also in most of the lower apes and even under certain conditions in some quadrupeds—e.g., the bear. Writers on posture are apt to assume that the anthropoid apes habitually adopt the quadrupedal attitude and mode of progression. Yet a glance at the illustrations in W. Kohler's "Mentality of Apes"[3] will show that in none of the six plates of the various activities of chimpanzees is a single ape on all fours. The value of the three curves of the spinal column as a composite spring, which absorbs shocks transmitted through the lower extremities towards the cranium and brain, seems to have been overlooked by most writers on this subject. Dr. Schwartz summarises the position thus:—

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[1] M O Eckford Amer Jour of Hygiene, 1927, vii, 201

[1] A Résumé with Comments of the Available Literature relating to Posture, by Louis Schwartz, Surgeon, United States Public Health Service, Washington, May 6th 1927

[2] The Lumbar Curves in Man and Apes, by D J. Cunningham A paper read before the Dublin Academy and abstracted in Nature, 1886, xxxiii, 378

1. There is a lack of agreement in the various definitions of standards and tests for good posture.
2. Heredity, type of build, balance of muscle strength, and tone have not been given sufficient importance in establishing standards for posture.
3. It has not been established whether the faulty postures associated with certain diseases are the causes or the results of these diseases.
4. There is no universally satisfactory test for physical fitness.

The bibliography should be useful to students and future writers upon this subject.

FLUID TENSION IN THE EYE

THE thesis which Dr. W. S. Duke-Elder[4] sets out to demonstrate in an important monograph is this: that the nature of the mechanism of the formation and circulation of the aqueous humour, as at present classically accepted and taught, is wrong. The aqueous, he contends, is neither a secretion, nor in the accepted sense a transudate from the blood; it is a dialysate from the capillary plasma, the essential dialysing membrane being the capillary walls. Under normal conditions, while an interchange due to metabolic activity constantly occurs, and an internal thermic current exists, the aqueous humour does not circulate actively through the eye, but is in equilibrium with the capillary blood; at the same time constantly occurring changes of pressure, induced by muscular movements, &c., superimpose upon it secondarily a minimal and intermittent circulation. We have quoted the author's own words because no condensation of them would give a correct idea of his thesis, which he supports by arguments based on the general chemical composition and physical properties of the aqueous both in normal and abnormal states. That the phenomenon of intraocular pressure is not to be explained by a specific secretory force is proved, the author maintains, by the fact that even the excised eye has a tension of 8 to 10 mm. Hg, which it retains for some considerable time and only loses gradually on the disintegration of the lining cells. There must be a lining structure which acts as a relatively waterproof membrane, and it is suggested that such a membrane is formed by the endothelium of the cornea, the endothelium and epithelium covering the iris and ciliary body, and the retinal epithelium supported by the membrane of Bruch. It is further suggested that the aqueous humour, being in thermodynamic equilibrium with the capillary blood, is without an active circulation in the generally accepted sense of the term, but that it is essentially stagnant, apart from the osmotic interchange of the constituents of the two fluids and apart from an intermittent circulation due to the activity of the external and internal musculature, assisted probably by the rhythmic variations of the ocular pulse. The canal of Schlemm acts as a safety-valve mechanism to aid in the maintenance of the intraocular pressure at its normal level. The author supports his argument by the results of the histological method of injection and of physiological experiment. The view that the aqueous is a secretion from glands in the ciliary body may be traced to the papers published more than 30 years ago by Treacher Collins, but Dr. Duke-Elder combats the idea that these so-called glands have any secretory function. The rival theory, that the aqueous is formed by a pressure transudation from the ciliary body, that it circulates through the eye, and finds exit by the canal of Schlemm is also examined and found wanting. The theory suggested is that the intraocular fluid is a simple dialysate from the capillary blood, the dialysing membrane being the capillary walls. There is perhaps no part of ocular physiology that has given rise to more controversy than this, as may be judged by the copious bibliography which is appended to this essay. Its practical bearing is by no means slight, especially in connexion with the pathology of glaucoma and of cataract. This paper is well calculated to serve as a challenge to those who hold to the older theories, and it will doubtless receive the attention that it deserves.

AN INTERNATIONAL ENCYCLOPÆDIA OF INDUSTRIAL HYGIENE.

TWO further fascicles have reached us of "Occupation and Health," which is being published in sections, from Geneva by the International Labour Office. These covers contain 11 articles, bringing the total issued so far up to 68. The work is appearing simultaneously in French and English, while the original articles may have been written in Spanish, Italian, German, or Dutch, according to the nationality of the authors. At times evidence appears of difficulties with translation, such are inevitable when highly technical processes are being described, but they are commendably few. The most important of the new articles are those dealing with tuberculosis and silicosis, miners' nystagmus, coal-miners' diseases, and the woollen industry. In each case the contributions to knowledge made by British investigators are noted—indeed, they form the foundation of each article. Thus the findings of the British Committee on Miners' Nystagmus are carefully stated and accepted regarding this disease and its prevention—viz., that more light, always more light, is needed at the bottom of the mine. The article dealing with this subject is excellent and quite up to date. The most weighty of the new articles is that dealing with the influence of industrialism upon the prevalence of tuberculosis. Statistics drawn from many sources are used to support the argument maintained, that three factors determine the incidence of tuberculous infection—namely, the individual, his environment, and his occupation. In this article it is unfortunate that the curve belonging to age-period 15–19 is ascribed to age-period 50–59 and vice versa. Reference is made to the influence, from the occupational point of view, of opportunities for infection, of alcoholism, and, in particular, of the specific effect exerted by inhaling silica dust. The subject of silicosis in reference to pulmonary tuberculosis is here concisely stated and brought up to date. The article dealing with coal-miners' diseases (apart from nystagmus) contains illustrations of men at work in continental coal-mines, and statistics of coal-mining and the diseases associated with it in various parts of the world, including Great Britain. Although the figures are not all presented in the same way, which may lead to difficulty in grasping their full significance, there appears no reason to doubt that coal-miners as a whole suffer little from tuberculosis, but much from other respiratory diseases, while they have something like a monopoly of septic infections of the palm of the hand and of the knee. Their high death-rate from accident holds good all over the world, increasing with the depth of the mine. Fortunately, preventive measures have kept British accident figures below those of most other countries.

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[3] Translated by Ella Winter, B.Sc. London: Kegan Paul. 1925.

[4] The Nature of Intraocular Fluids. By W. Stewart Duke-Elder (Henry George Smith Research Fellow). Being the Sir Francis Laking Prize, 1926–27, from the Biochemical Department, St. George's Hospital, London. British Journal of Ophthalmology.

THE DOUBTFUL VALUE OF ISOLATION IN SCARLATINA

The recent claims of Dr. C Chapin, of Providence, U S.A , with regard to the importance of the isolation of cases of scarlatina, have drawn a statistically-armed reply from Dr Peter M. Holst in the *Tidsskrift for Den Norske Laegeforening* for April 15th According to Dr. Chapin, isolation of cases of scarlatina means, in practice, the isolation of most of the severe cases, whereas many light cases not only escape isolation but also the diagnosis and treatment of a doctor He suggests that the most severe cases represent particularly virulent strains of organisms, and that the consistent isolation of these severe cases has helped to suppress such virulent strains; further, that in this hypothesis is to be found at any rate a partial explanation of the tendency scarlatina has shown of late to become a comparatively harmless disease His statistical material is handled so as to show that the decline of virulence of scarlatina has gone hand in hand with hospitalisation In his criticism of this teaching, Dr Holst points out that the great decline in the mortality from scarlatina in Norway occurred ten years before it was demonstrable in Sweden, although no one could claim that this difference was due to isolation being more effective in Norway. In 1880 the mortality from scarlatina in Norway was 13 6 per cent In Sweden in the same period it was 17 per cent In 1895 it was 3 9 per cent in Norway and 6 8 per cent in Sweden In 1907 Trodhjem, in 1910 Bergen, and in 1921 Stavanger abandoned the isolation and hospitalisation which had hitherto been enforced in cases of scarlatina, putting it, except in some details, in the same category as measles and whooping-cough In Oslo, however, the old regulations with regard to isolation and hospitalisation are still in force, and a comparison of Oslo with Bergen with regard to the incidence of the disease shows that the former has uniformly suffered much more than the latter In the five-year period 1900–04 the mortality from scarlatina was 1 8 per cent in Bergen and 3 3 per cent. in Oslo, the morbidity being also considerably higher in Oslo In the five-year period 1915–19 the morbidity in the two towns showed the same great difference, and while the mortality was only 1 per cent. in Bergen, it was 1 9 per cent in Oslo After referring to the experience of Helsingfors, where hospitalisation has failed to achieve results commensurate with the cost thereof,[1] Dr Holst concludes that the case for enforcing costly hospitalisation for scarlatina at the present time is not proven

THE CAUSE OF RHEUMATOID ARTHRITIS

Nothing useful is known of the causes which lead up to the first attack of rheumatoid arthritis It may, and often does, affect a single individual in a family among whom it is impossible to distinguish any difference of constitution, dietetic proclivity, or exposure to infection What is known of the disease is the inexorableness of its course when it has once started; it is as though a person should have complete prevision of the future with total loss of memory of the past The discussion, which took place at the Section of Comparative Medicine of the Royal Society of Medicine on May 25th, was postponed for a week in order to give opportunity to the very large number of speakers who desired to take part in it , but, searching as was the discussion, it may be held to have laid bare our ignorance rather than to have contributed to our knowledge There were advocates present of the principal ætiological theories in which the condition is regarded as primarily infective or primarily nutritional The evidence adduced was for the most part mutually destructive If, for example, the disease were due directly or indirectly to deficient nutrition surely its progress could be arrested by the diet rich in vitamins which is one of the first prescriptions of any modern doctor called in to treat any chronic ailment of obscure origin The large class of cases showing pyrexia, enlargement of the spleen, and inflammatory exudate strongly suggests an infective condition at some stage of the disease , yet the argument that if due to infection the disease would surely be more common among those who live poorly and closely together is not easy to answer Dr M J Rowlands, who introduced the discussion, produced evidence of the sterility of the synovial fluid in 40 cases of rheumatism and rheumatic arthritis examined by him in 1914–15 and of the association of a similar condition in animals with a colon bacillus infection of the urine In the course of the discussion prominent biochemists pointed to the lowered resistance to infection brought about both in animals and human beings by serious deficiency in certain accessory factors of food It seems, in fact, to be almost the rule when vitamin A is deficient Deficiency of vitamin B, on the other hand, produces some change in the lymphoid tissue and some thinning of the intestinal wall which may be a prelude to the diffusion of bacterial poison from the alimentary canal The growing evidence of the composite character of vitamin B should, however, render us chary of drawing any definite conclusion from the evidence as at present before us It may be that all the morbid changes observed in various cases, including the bacilluria and the intestinal toxæmia, are the effect and not the cause of the rheumatoid condition Such a discussion may have value, but rather in the direction of stimulating controlled research than in building up a framework of facile theory

A PIONEER IN IMMUNOLOGY.

It is announced that Dr. Abraham Zingher died on Sunday last in a laboratory at the Willard Parker Hospital, New York, being asphyxiated by coal-gas which had escaped unnoticed from a bunsen burner Dr Zingher was assistant professor of hygiene in the University of New York and had spent most of his professional life in that city He was in his forty-second year, and graduated from Cornell University College in 1908 For the last ten years he had been associated with Dr W. H. Park, to whom he was assistant, and these workers have done a great deal towards the introduction of Schick-testing and active immunisation against diphtheria It is primarily owing to their efforts that these measures have been accepted by the medical profession and the public, and their success is shown by the fact that some 2 million inoculations have been carried out in New York A campaign has been set on foot to rid the city of diphtheria by 1930, and should reasonable success attend this attempt the result will be a splendid monument to the work stimulated from the Willard Parker Hospital Besides this Dr Zingher's name will be associated with the research on scarlet fever, for he investigated the use of the Dick test and of antitoxin and studied active immunisation against the disease With the natural zeal of the keen man he had here, perhaps, shown a slight tendency to accept conclusions without demanding such a weight of evidence as was needed to satisfy him in the earlier research on diphtheria All this recent work owes much to him, however, and many European visitors to New York will gratefully remember Dr Zingher's enthusiasm and ready courtesy in arranging to demonstrate the work of testing and inoculation that was going on under his direction

HOSPITALS AND PANEL PATIENTS

That there is not only a " bottle of medicine habit," but a hospital habit has become increasingly evident since the war The great extension of hospital facilities for the treatment of disease during the last few years has induced many people who are quite well able to pay for ordinary medical attention to resort to the voluntary hospitals, and the consequence is that, to say nothing of waiting-lists for beds, almost every out-patient department is seriously congested If one patient involved only one attendance the difficulty might be soluble, but the great voluntary institutions now count their out-patient attendances by tens of thousands in a year, and the strain is becoming too heavy to be borne either by finance or physical accommodation It is therefore not surprising that the London Hospital should have decided to place some limits to its readiness to treat all comers In future it will rule out panel patients altogether, save when they produce a letter from their panel doctor stating why the help of the hospital is required In view of the necessary limitations of panel practice many such occasions must arise though their proportion should be small. For the increasing tendency of this type of patient to resort to the hospitals no responsibility rests upon the panel doctor The increase year by year in the number of prescriptions issued to insured persons bears witness to the fact that the panel doctor is taking the lion's share in the treatment of trivial illness In the majority of cases the panel doctor does not send his patients to hospital; he is, in fact, usually unaware of their action But it is obviously unfair and unreasonable to expect a hospital to do for nothing work for which the panel practitioner is paid, and it was assuredly never the intention of the originators of health insurance legislation that the beneficiary should be able to flit at his own good pleasure from his private doctor to the nearest hospital when his ailment is such as to come well within the limits of medical benefit The experience of the London Hospital is that it is being constantly asked to treat trivial illnesses which fall naturally within the province of the panel doctor, and it is performing a public service in refusing any longer to be made the victim of what is usually little better than caprice It is not only not shutting its doors to any genuine "hospital case," but is augmenting its power of dealing with such cases by barring the relatively unimportant

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[1] See Dr Max Björksten's important monograph, Der Scharlach in Helsingfors in den Jahren, 1800–1914

THE Registrar-General's Statistical Review of England and Wales for the year 1925 has been completed by the issue of Part III Text, which is now on sale at H M Stationery Office, price 5s This contains the official analysis of the vital statistics contained in Parts I (Medical) and II (Civil), issued last year

The Services.

ROYAL ARMY MEDICAL CORPS

Lt-Col J G Foster, having attained the age for retirement, retires on retd pay

Maj E H M Moore to be Lt-Col, vice Lt.-Col J G Foster

Capts to be Majs K M Nelson and D McVicker

Lt K Fletcher-Barrett to be Capt

H T Chiswell to be Temp Lt

MILITIA

Maj H K Ward relinquishes his commn and retains the rank of Maj

TERRITORIAL ARMY

Maj J Taylor resigns his commn and retains his rank

Maj H N. Burroughes, having attained the age limit, is ret and granted the rank of Lt.-Col with permission to wear the prescribed uniform

Capt. V H Wardle to be Maj

COMMISSIONS IN THE ROYAL ARMY MEDICAL CORPS

A limited number of commissions in the Royal Army Medical Corps will be offered by nomination in July Candidates, who must be under 28 years of age on August 1st, should submit their applications, not later than July 15th, to the Under-Secretary of State, the War Office (A M D 1), Whitehall, London, from whom further particulars may be obtained.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CCXXVII.

THE TREATMENT OF FEMORAL HERNIA.

THE treatment of femoral hernia is governed by two factors First, it is anatomically impossible to control the neck of the sac from without, palliative treatment by a truss is therefore at best unsatisfactory. Secondly, strangulation is more frequent than in any other variety of external hernia, and when it occurs is of a more dangerous type For these reasons treatment by operation is, in most cases, the wiser course Advanced age or disease may render any operation inadvisable, but the risks of a general anæsthetic may be avoided by the use of local anæsthesia, which is particularly well suited to operations upon femoral and inguinal herniæ Treatment by a truss is less objectionable in the larger herniæ Where the sac is lax and a good impulse is felt on coughing, and where the canal is large enough to admit two fingers, the risks of strangulation are very much less than in the common type of hernia which is small, tense, and gives hardly any impulse on coughing In large herniæ, however, it is difficult to find a truss which can be tolerated by the patient

The majority of femoral herniæ are irreducible from their first appearance, if the attempt succeeds, there is no tendency for the contents to remain reduced, for the crural ring, once forced, remains patent owing to ligamentous nature of its boundaries It is impossible to apply any pressure which will effectively keep the peritoneal sac closed The mass which can be felt in Scarpa's triangle in these cases consists for the most part of alternating membranous and fatty coats, a swelling the size of a walnut will usually contain a sac no larger than the last phalanx of the little finger When such a sac has been emptied, only the contents are returned to the abdomen, and the coverings remain as an elastic mass in Scarpa's triangle The small sac lying in this mass cannot be effectively controlled by the pad of the truss The funnel shaped neck lies deeply under the inner end of Poupart's ligament, and must always remain open, inviting recurrence.

Again, a femoral truss can neither be kept in place nor worn with comfort. Movements of the body occur around certain planes, and leave their impress on the surface as flexure lines upon the skin of which the creases in the palm are the best-known examples The flexure line corresponding to movements between thigh and trunk, well seen in the obese, runs transversely across Scarpa's triangle from the pubic spine on the inner side to the region of the top of the great trochanter The pad of an inguinal truss lies wholly above this line, and moves with the trunk. The pad of a femoral truss must lie athwart it, and can therefore never rest firmly on subadjacent parts, or be free from discomfort.

The frequency of strangulation in femoral hernia is accounted for by the unyielding nature of the structures surrounding the neck When strangulation occurs, these same factors lead to early gangrene and perforation of the intestine Further, the symptoms of strangulation may not be associated by the patient with the presence of a femoral hernia, which she knows to be there Zachary Cope has observed that the peritoneum of the posterior abdominal wall, from which the sac of a femoral hernia is derived, is less sensitive than the anterior abdominal peritoneum which lines an inguinal sac Localised pain is sometimes so inconspicuous that the patient may mistake the vomiting and colic of a strangulation for symptoms of food poisoning, and may take an aperient, making matters infinitely worse

For these two reasons, the inefficacy of the truss and the danger of strangulation, the patient should be advised to submit to operation unless there are cogent reasons for avoiding this course

Type of Operation.

An operation designed for the radical cure of any hernia should fulfil three requirements the isolation and emptying of the peritoneal sac, the closure of the sac at its neck, and the repair of the hernial opening at its commencement, in order to prevent the formation of a fresh sac

The special features of femoral hernia are concerned with the character of the hernial opening The crural canal, along which a femoral hernia passes, is a compartment of the femoral sheath, and its wall is derived from the fasciæ lining the abdominal cavity. It is closed above by a fibrous diaphragm, the septum crurale. Normally it contains loose fat. It transmits a number of lymphatic vessels, by which lymph passes from the deeper subfascial inguinal glands surrounding the femoral vein to the external iliac group of abdominal lymph glands. It also acts as a resilient washer lying beside the femoral vein as it passes under Poupart's ligament, and allowing that vessel to expand when, under conditions of muscular exercise, the volume of blood returning along it may increase as much as eight- to ten-fold. Because of this relationship to the femoral vein, any method of closure which fastens down the inner end of Poupart's ligament to the pubis, whether by suture or by a metal staple, is unsound. Such a procedure depresses the ligament along its whole length, and makes it constrict the femoral vein. Moreover, as this ligament is an integral part of the attachment of the abdominal musculature, it will not remain in its new position. Stitches cut out, while staples are apt to work loose from the bone and so cause serious trouble.

The operations for femoral hernia are of two main types: those where the sac is approached from above Poupart's ligament through the inguinal canal, and those where it is approached directly from Scarpa's triangle. The former approach allows the sac to be tied off at its neck, and is also satisfactory from the point of view of closure of the canal, but it does not permit the isolation of the sac from its surroundings. In the operation performed entirely from above, the whole sac with all its coverings has to be pulled under Poupart's ligament into the inguinal incision, thereby tearing an unnecessarily large hole in the fibrous structures of the canal and rendering closure difficult. It is only necessary to remove the peritoneal sac. The remaining coverings should be left undisturbed in the crural canal, as they help in the obliteration of the space.

The approach from below does not permit direct access to the neck of the sac. The wall of the bladder is not uncommonly drawn down into the crural canal on the inner side of an old-standing hernia, and can only be stripped off the neck of the sac with some difficulty. If the surrounding tissues have been cleared without the aid of direct inspection, it is very easy to include the bladder in the stitch which transfixes the neck of the sac, or even to cut away part of its wall. The combined route is therefore preferable in all cases.

The Standard Operation

1. An incision is made along the line of the inguinal canal, and is then carried vertically downwards for 2 inches over the saphenous opening. As in all curved incisions, it is advisable to scratch the skin transversely before cutting in order to ensure accurate approximation afterwards. The wound is deepened to expose the external oblique over the length of the inguinal canal, the inner end of Poupart's ligament, and the coverings of the femoral sac. Cutaneous vessels, which are very numerous, are secured with pressure forceps as they are encountered, and tied off.

2. The coverings of the hernia are now divided in turn with Mayo scissors till the peritoneal sac is opened. The interior is inspected, and any contents returned to the abdomen. If they are adherent at the neck no attempt is made to detach them till later. The edges of the sac are caught with fine forceps, and all coverings stripped off by blunt dissection till the peritoneal sac is freed right up into the crural canal. The neck is clamped with a pair of artery forceps and the remainder of the sac cut away.

3. The inguinal canal is now opened by incising first the external oblique and then the cremaster muscle. The cord or round ligament is lifted from its bed and held out of the way in the loop of a pair of tissue forceps, exposing the posterior wall of the inguinal canal consisting of transversalis fascia. This is incised immediately above and parallel to Poupart's ligament. If the forceps which grasp the neck of the sac are now thrust upwards the latter is pushed up into view through the soft extraperitoneal fat. The forceps are then removed, the neck caught up, and brought into the wound. In this situation it is very easy to free any omentum which is adherent, and, by trimming the edges, to close the opening in such a manner that no dimple is left on the abdominal surface of the peritoneum.

4. The hernial opening is now closed at its abdominal end by extending the attachment of the conjoined tendon further along the ilio-pectineal line, so that it lies close to the femoral vein, and interposes a barrier of muscle between the abdominal cavity and the crural canal. The crural canal itself is reinforced by drawing the fatty coverings of the sac into the empty space left by its removal. With the right hand two or three mattress sutures of stout catgut are passed first through the lower edge of the conjoined tendon, then through Astley Cooper's ligament (the thickened upper edge of the pectineus fascia on the ilio-pectineal line), then down through the crural canal into the fatty coverings of the sac which have been left in situ, then back through the crural canal to the conjoined tendon. Meanwhile the forefinger of the left hand is kept on the femoral vein, pressing it outwards out of the way. When these sutures are tied, the lower edge of the conjoined tendon is drawn down to the pelvic brim just inside the femoral vein, and a fatty plug from the saphenous opening is drawn up under Poupart's ligament, forming a firm yet resilient pad.

5. The cord is now replaced, the cremaster and external oblique muscles sutured, and the skin wound closed.

Operation in Large or Recurrent Hernia

In old-standing femoral herniæ, or in those which have recurred after operation, the peritoneum and its coverings become adherent to all structures under Poupart's ligament, so that satisfactory isolation of the neck from below is impossible. In such cases, after exposing and opening the sac as in the standard operation, Poupart's ligament should be divided ¼ of an inch from its pubic attachment and thrown outwards. This procedure makes the exposure of the peritoneum and repair of the canal much more easy, and, in a difficult case, involves much less damage than an attempt to clear an adherent sac from below. Division of Poupart's ligament is better than detachment of the pubic spine. No disability follows if the ligament is carefully sutured at the end of operation.

In some old femoral herniæ the protrusion becomes so large that Poupart's ligament is dislocated forwards, and the neck of the sac comes to lie in front of, as well as internal to, the femoral vessels. The method of repair outlined above is not sufficient in such cases. After removal of the sac and closure of the peritoneum by the inguinal route, the weak area must be repaired with strips of fascia lata ¼ inch wide, and taken from the whole length of the thigh. Gallie's needle as sold for plastic operations with fascia lata is too large for this operation, and a similar needle only an eighth of an inch wide is better. The fascial strips are passed from the conjoined tendon down to Astley Cooper's ligament, up through the edge of Poupart's ligament, and then back to the conjoined tendon. This suture is continued inwards until the whole weak area is bridged by a lacing of fascial strips, only allowing comfortable room for the femoral vein and artery to pass into the thigh. No attempt should be made to draw the fascial bands tight, they protect the gap by their own strength rather than by drawing surrounding parts together. This method has proved very successful even in large and old-established femoral herniæ.

Femoral Hernia in Childhood.—While the majority of femoral herniæ are seen in adult women who have borne children, they may also occur in childhood. Before puberty the incidence in both sexes is the same, and such herniæ probably occur in congenital sacs. In these the sac may be closed from below, and Gimbernat's ligament sewn to the fascia over the pectineus. It is better, however, to operate by the combined route as in adults.

There are only two *complications* of importance—injury to bladder and thrombosis of femoral vein.

Gross injury to the bladder is very unlikely to occur if the operation is carried out by the combined route. Slight hæmaturia occurring on the day after operation may be due to disturbance of the wall of the bladder by blunt dissection, or possibly to a stitch having penetrated part of the musculature. If the condition of the wound is satisfactory, a catheter should be tied into the urethra for 48 hours, to prevent any overfilling of the bladder and tension of its walls.

Thrombosis of the femoral vein is due to injury of the wall of the vessel. It is perhaps more likely to occur after the operation performed entirely through the inguinal canal, as the dislocation of the sac from above involves forcible pulling upon structures which are firmly adherent to the vein. Clean dissection lessens the risk of thrombosis. Stagnation of the circulation is a contributory factor, and for this reason gentle daily massage to the thigh should be employed and movements of the limb encouraged during the immediate post-operative period.

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Special Articles.

INTER-STATE POST-GRADUATE ASSEMBLY OF NORTH AMERICA

VISIT TO LONDON, JUNE 1ST–3RD, 1927

LAST week we reported the inaugural session of the congress held in London by a large number of medical men from the United States and Canada who are visiting this country under the auspices of the North American Post-Graduate Assembly During the congress a series of short lectures were given by Sir Crisp English, Dr Murray Levick, Dr L S T. Burrell, Mr H D Gillies, Mr. W E Miles, Prof. Hugh MacLean, Mr T P Dunhill, Mr H W. Carson, and Sir StClair Thomson On Thursday a demonstration was given in the museum of the Royal College of Surgeons, and on Friday evening there was a reception at the Royal Society of Medicine The papers which follow are among those which were read at the congress The contributions of Sir Crisp English and Dr L S T Burrell appeared in our columns last week

THE POST-FEBRILE TREATMENT OF INFANTILE PARALYSIS

BY G MURRAY LEVICK, M.R C S.

THE post-febrile treatment of infantile paralysis requires special knowledge of several branches of treatment No case should be considered to have had every available treatment that has not received (1) postural treatment administered in the light of modern orthopædic teaching, (2) treatment by light, (3) electrical treatment; and (4) massage

Postural Treatment.

When the attack has been extensive, so that a large number of muscles have been affected, the patient should be kept in bed for a long time, and in cases where the trunk or the lower limbs are extensively affected it is much better to keep the patient in bed for many months Experience has shown that there is much to be gained and little to lose by this measure, provided that the following treatment is adopted So long as acute tenderness persists in the muscles of a limb, that limb should be splinted, great care being taken to prevent the pressure of bandages over the affected muscles This is most important.

In the case of the lower limb, the sole of the foot should be kept at a right angle with the leg, or, when tibialis anticus is the chief consideration, slightly dorsiflexed When tenderness has disappeared, I think the use of rigid splints should at once be abandoned—with the exception of the rectangular splint for the foot, of which more will be said later—and a method of slinging the limb adopted in its place The leg may be slung by bandages from a bar fixed longitudinally over the bed, a padded gutter splint being used to prevent the pressure of the bandages upon the calf muscles If the glutei are affected, the leg is slung just clear of the bed If the psoas is affected and the glutei are not, the leg is raised to a higher level in order to relieve traction upon the psoas, and if the quadriceps are not affected, the knee may, with advantage, be flexed

The rationale of this method is as follows Our object is to assist recovery of tone in those muscles that have partial or temporary disturbance of their innervation The effect of a rigid splint is to prevent recovery of tone In fact, it is known to cause loss of tone even in a muscle that has a normal innervation, and use is made of this knowledge when a splint is applied to a fractured limb By slinging the limb this influence of the splint is to a great extent avoided, and there is no traction on the affected muscles The patient may be encouraged to move the limb at will in such a way as to restore function, these movements—possibly very feeble and scarcely perceptible—being made possible by its suspension on the bandages which absorb its weight It is, indeed, almost as if the limb were floating in water Even before any voluntary movement is possible, the reflex effect of the slight swaying motion frequently produced in the limb by movements of the patient's body help the return of muscular sensibility, which may be functionally suspended, and reflexly tend to promote nutrition and tone. This treatment, if it can be carried out, is much to be preferred to early ambulation with the limb supported by a caliper, because a caliper has the effect of a splint in regard to muscular tone and function

Mention has been made of a support for the foot I use a Jones foot splint, but with a cushioned strap, which passes from behind the heel round dorsal angle of the foot and keeps the heel well home, obviating the need for tight strapping or bandaging around the foot and leg, which is disastrous to the nutrition of the enveloped tissues

The suspension of the upper limb by slinging, when the deltoid is affected, can be beautifully carried out During the stage of acute tenderness, however, if it is possible, the limb is best splinted on a Fairbanks abduction splint This excellent splint keeps the limb in the best possible position, but a common mistake is to pass a bandage or strap round the upper arm, so as to displace the head of the humerus downwards to the lower margin of the glenoid cavity This malposition is sometimes impossible to rectify later on, and produces a permanent functional paresis in the deltoid, even if that muscle should recover a satisfactory innervation and nutrition The limb can be kept in place upon the splint by a bandage round the forearm only, and the splint may be padded under the upper end of the humerus to ensure that the head of that bone is not displaced downwards when the limb is slung A bandage is passed under the arm close to the axilla, so as to pull the head of the humerus upwards The patient is encouraged to use the hands—as in sewing or knitting—because the movements so produced upon the suspended limb, and the functional effect of this activity, are just the influences most desirable for the paretic deltoid, and there is never any chance of stretching its fibres

When the muscles of the back are weakened, the patient should not be allowed to get up until everything has been done to restore their strength as far as possible To avoid spinal deformity, the patient may be kept in the prone position in bed, by means of a pelvic band, with a triangular cushion under the chest Children are very comfortable and happy in this position, and its effect in strengthening the weakened erector spinæ muscles is very satisfactory. Before the patient is allowed up permanently he should be removed from the bed daily for exercises and electrical treatment to ensure that everything has been done to strengthen the erector spinæ muscles preparatory to his assuming the erect position If this measure were thoroughly enforced, I am convinced that many patients would be saved from spinal deformity

Treatment by Light

After placing some hundreds of cases of infantile paralysis on treatment by natural and artificial light, I am now convinced that this form of treatment is of great benefit It seems to me that the improvement in the nutrition of the nervous system of patients undergoing a carefully regulated light treatment is on a par with that noted in the bones of rickety children Just as the rapid increase in the retention of lime salts in the body, following this application of light, causes a corresponding calcification of the bones in rickets, so the nerve centres appear, by the retention of other nutritional factors, to recover from malnutrition Many patients who have suffered recently from an attack of acute anterior poliomyelitis exhibit symptoms of neurasthenia and these symptoms clear up wonderfully under light treatment. The X ray evidence available in the case of the bones is here wanting, but the clinical symptoms are too marked to be disregarded.

In infantile paralysis we may find that many anterior horn cells are completely obliterated. On the other hand, many are temporarily affected, afterwards to recover, as shown in the regeneration of their axons. Therefore there must be many that tremble in the balance between regeneration and degeneration, and it is just here that the effects of light treatment are so useful in turning the balance in favour of recovery. It is partly on account of the neurasthenic after-effect in the more severe cases of acute anterior poliomyelitis that I have so strongly recommended a prolonged treatment in bed. This can easily be undertaken in such a special establishment as the Heritage Craft Schools at Chailey, where the education and treatment of these patients proceeds concurrently and in accordance with the medical aspect of each individual. With well-to-do patients there is of course, no difficulty.

In addition to the general constitutional effect of the irradiation, we must not overlook the direct effect upon the nutrition of the muscles. This effect, which is marked, is I think due to the action of the red rays. I have dealt fully with this matter in a paper[1] read at the International Congress of Radiology in London in 1925. Special lamps fitted with red screens, for the application of intense red light to the affected limbs, are now available.

I would like especially to point out the danger of disappointing results where the treatment is given by those who are unversed in the delicate operation of heliotherapy. This treatment requires care and discrimination. It demands a clinical experience of the complaint with which we are dealing as well as the technical and scientific details involved in the application of heliotherapy, and, above all, a hospital training. The publication of the paper above referred to has, unfortunately, been followed by the exploitation by manufacturers of lamps for the production of red light and ultra-violet light; these are being purchased on all sides by those who administer the treatment in a manner that can only lead to erroneous conclusions.

Bearing this direct effect of the red rays in mind, it will be seen that the treatment of patients by a mercury-vapour lamp alone falls short of the possibilities offered by a more comprehensive application. As far as artificial light is concerned I prefer my own arrangement of a mercury-vapour lamp plus a group of carbon filament lamps fitted with red screens for use when it is desirable to reduce the infra-red radiation in order to render an intense red radiation supportable. So long, however, as the skin shows no signs of overheating I prefer to discard the red screens so that the whole of the rays are absorbed by the patient.

At the Heritage Craft Schools, when patients suffering from infantile paralysis are undergoing special treatment I am particular that the light treatment shall be uninterrupted. In the winter they have artificial light treatment either daily or three times a week, whilst in the summer they have real sun treatment carefully administered when this is possible; when the weather is overcast they have artificial light. There are three hospitals attached to these schools and at each there is a solarium for real sun treatment and a special department for artificial phototherapy. In many cases of infantile paralysis treatment by light has proved a real boon because of its effect in raising the recuperative powers. Prolonged rest in bed plus phototherapy is an important measure that may greatly influence the prognosis; without phototherapy the treatment in bed may produce debility.

In addition to the muscular atrophy, there is another type of malnutrition that calls for local irradiation. Many cases exhibit profound vascular disturbance leading to stagnation of the blood-supply with consequent blueness and subnormal temperature of the limb. These are the patients that suffer most severely from chilblains in the winter months, and irradiation of their limbs with the carbon filament lamp will be found very useful as a remedial and (better still) as a preventive measure; in this case it may be well to discard the red screen so as to obtain the full infra-red radiation. In establishments where the patients are much exposed to the winter air, the affected limb should afterwards be clothed in a loose and light windproof material. Such a covering, over a woollen sleeve mit or stocking, is better than several layers of woollen material, a fact well known to members of polar expeditions.

Electrical Treatment

The electrical treatment of peripheral nerve injuries and diseases is a special and separate branch of electrotherapeutics. Only by the provision of separate and special training for those who undertake it can efficient electrical treatment for anterior poliomyelitis be secured. A search into neurological or electrotherapeutic literature leads to disappointment, but it is in the technique that teaching is most needed.

There are several types of electric current to be mentioned in this connexion. The *diathermy current* is of great use in promoting circulation in limbs that suffer from severe atrophy, but it should be an axiom that this application is unsafe and unjustifiable unless it is given by a qualified medical man who has made a special study of the subject, or by an assistant working under his direct supervision—that is to say, actually in his presence. I am convinced that lay operators may do much insidious damage to the deep tissues—e g., the sealing up of lymphatic channels, or even worse damage—without any sensation informing the patient and without injury to the skin. With this warning I would reiterate the opinion above expressed as to the benefit to be derived from the use of diathermy.

The interrupted *galvanic current* should be employed, by the longitudinal method, for the treatment of muscles that give no response to faradic currents. In most cases rather large button electrodes should be used, and the affected muscles should be picked out for treatment separately, so that the extent to which each muscle is stimulated may be gauged at each treatment.

There is a threefold reason for applying interrupted galvanic current to muscles temporarily isolated from the influence of their motor nerves. After no more than half a dozen closures of the galvanic current, administered as above advised, the blue skin of a chilled atrophic limb covering the muscle will take on the bright red hue that indicates an active arterial circulation. This evidence of vasodilatation in the skin may be taken as an indication of a similar change in the circulation of the muscle beneath it, because the current penetrates this muscle. In addition, there is the physiological effect of counter-irritation. Thus we secure oxidation and nutrition of the sarcomeres which justifies the production of a series of contractions that take place through the concentration of hydrogen-ions at the cathode each time the circuit is closed. At each contraction we are to suppose, on the acceptable teaching of Prof. A. E. Schaffer, the contractile substance passes into the tubules of the sarcous element which dilate for its reception. Thus the elasticity of the skeletal structure is maintained. Without this galvanic stimulation such activity is impossible, the contractile substance remaining outside the tubules in the relaxed muscle-fibres, so that there is grave risk of a loss of contractility in the muscle which may be permanent, so that the subsequent regeneration of the nerve axons is ineffectual.[2]

In place of the interrupted galvanic current condenser discharges may be substituted. These produce less sensory effect and are useful in the treatment of nervous children, but, in my experience, the physiological result of this method is inferior in vasomotor effect

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[1] British Journal of Radiology, April, 1926.

[2] Reference may here be made to my paper in the Journal of Bone and Joint Surgery, April, 1923.

Great judgment is needed to ensure that the interrupted galvanic treatment of paralysed muscles is not overdone Results are frequently spoiled for this reason Valuable as this treatment may be when properly administered, it is better left alone if there is any fear of maladministration, because a muscle undergoing this treatment is at the mercy of the operator and may be left in a state of extreme fatigue

In certain cases a reversing metronome may be employed so that the poles at the two electrodes are reversed at each interruption In that case the strength of the stimulus is much increased in proportion to the strength of the current The *faradic current* should always be employed when an efficient contraction can be obtained with a strength of current that is not unduly painful, but coils should be used that have a very stout wire in the secondary winding In fact, the wire of the primary and secondary winding should be of equal calibre I strongly advocate the Smart-Bristow coil as being the most satisfactory type It can be used either with a metronome interrupter or as a surging current by employing the iron core, the latter being the most desirable method in most cases It is never desirable to employ a continuous faradic current—i e , a current that does not fall to zero in a rhythmical manner so as to ensure frequent and adequate periods of complete relaxation in the muscle

In addition to the stimulation of the motor point in particular, the current should be so directed that it streams through the greater part of the muscle This will enhance the effect of the treatment It should be remembered that faradic stimulation of the nerve-supply of a muscle produces an effect on its tone and nutrition that cannot be obtained by the voluntary stimulus alone In cases of partial recovery a fair contraction may be obtained, as a rule, by faradism, long before the patient can produce it by voluntary effort Re-education and faradism should therefore proceed concurrently.

Indications for Treatment

Frequently we are faced with the responsibility of deciding whether treatment is likely to lead to a useful result—that is to say, whether we are justified in advising the parents to seek a prolonged course of treatment that must involve considerable expense The difficulty is greatest when the patient is seen for the first time and is suffering from the effects of an attack of anterior poliomyelitis that has occurred perhaps years ago The affected muscles should be carefully tested, not only as to their innervation but also as to the extent to which atrophy has proceeded, and it must be decided whether the recovery of hopeful muscles is likely to be of any real use in view of the hopeless atrophy of others To detail all the considerations that arise in such a case is impossible in a short paper It is certain that many cases formerly considered beyond remedy have exhibited useful recovery since the comprehensive treatment above outlined has been carried out at Chailey and elsewhere

[Dr Levick concluded his address by describing three cases treated at the Heritage Craft Schools]

CASE 1 is a patient now aged 17 The attack of anterior poliomyelitis occurred 15 years ago When treatment began four years ago he *had* absolutely no voluntary response in his right quadriceps, four months later voluntary response began to appear Now there is a useful recovery so that the caliper he had worn is replaced by a short outside iron.

CASE 2 —The patient suffered from the attack about two years ago, and displays the result of postural treatment for the back muscles and treatment by light He was admitted to the Heritage Hospital annexe six months ago He had never been able to sit upright since the attack owing to weakness of his back muscles which were extremely wasted and atonic He was immediately posturised and given light treatment. The result is, as you see, admirable He can already sit upright without curvature, and the muscles are rapidly returning to normal When he came he had acetonuria This has now disappeared under light treatment

CASE 3 —A boy now aged 4 had an attack when aged 1, affecting quadriceps and the tibialis anticus in the right leg He came under treatment eight months ago He could not articulate, could not masticate or feed himself in any way, was dull and unintelligent, and had incontinence of bowels and bladder He weighed 25 lb and showed definite signs of rickets Now he eats nicely, is very cheerful, and is learning to talk. Voluntary response has returned to the quadriceps He weighs 2 st. 5 lb , and is gaining 2 lb per week This patient affords a fine example of the nutritional effect of phototherapy

Lantern slides were shown illustrating Dr Levick's method of slinging limbs affected by paralysis, as well as other means employed in postural treatment

THE CARDIOVASCULAR CHANGES ASSOCIATED WITH RENAL DISEASE

BY PROF HUGH MACLEAN, M.D., D Sc , F R C.P.

IN discussing cardiovascular changes associated with nephritis it is necessary at the outset to refer briefly to the different manifestations of renal disease Within recent years elaborate classifications of nephritis have been introduced, especially by German observers, and claims have sometimes been made to the effect that such classifications permit an exact diagnosis of the nature of the pathological changes in the kidneys from a study of the symptoms. These claims, however, are more theoretical than practical So far, no investigator has ever been able to correlate the clinical signs and symptoms of renal disease with the pathological lesion in the kidneys The reason for this is obvious Whatever the nature of the histological lesion, the effect on kidney function is generally the same, and since the various symptoms associated with renal disease are directly dependent on disturbances of function, it is clear that the clinical condition may differ but little whatever the exact nature of the pathological change that caused the mischief

Broadly speaking, the different forms of nephritis may be classified under three headings: *Acute nephritis, hydræmic nephritis,* and *azotæmic* or *chronic interstitial nephritis* In acute nephritis all the functions of the kidney are more or less thrown out of action Now the chief renal functions from the clinical standpoint are: (1) excretion of fluid, (2) excretion of salts, and (3) excretion of waste products of protein metabolism In acute nephritis we therefore find that fluid and salt are not excreted, with the result that marked œdema is often present, nitrogenous waste products also tend to be retained, and consequently there is an accumulation of these bodies in the blood

In so-called chronic disease the whole of the kidney functions are not usually involved In hydræmic nephritis there is a difficulty in excreting water and salt, but no difficulty whatever in excreting nitrogenous waste substances In chronic interstitial nephritis (azotæmic nephritis), on the other hand, there is generally no material interference with the excretion of water and salts, but the excretion of waste nitrogenous products is markedly diminished In hydræmic nephritis it follows that the most marked symptom is œdema Azotæmic nephritis, on the contrary, is characterised by an accumulation of waste products in the blood and a low concentration of these bodies in the urine Whether the azotæmic condition arises from a primary acute, or subacute attack of nephritis, or whether its cause is to be found in primary changes in the renal blood-vessels, is quite immaterial as far as the signs and symptoms are concerned From a careful study of the previous history of the patient and of the condition present on examination, we perhaps may guess at the nature of the renal lesion, and subsequent histological examination may prove our surmise to have been correct On other occasions we may be surprised to find that a clinical picture which apparently limited the pathological condition to a certain definite histological change proves to be associated with a lesion altogether different from what we expected.

Cardiovascular Changes in Nephritis.

The association of hypertension, and consequent cardiac enlargement, with chronic interstitial nephritis has long been recognised in clinical medicine. Often in chronic disease the systolic blood pressure is found to approach 200 to 250 mm. mercury or more, while the apex beat may be well outside the middle line in the sixth or seventh interspace; along with the high systolic pressure there is a greater or less rise in diastolic pressure. This condition may be accompanied by a thickening of the walls of the peripheral arteries, but it must be remembered that unless this thickening is very marked it is often exceedingly difficult to gauge. The feel of the artery under the finger may vary considerably with the tone of the vessel wall, so that a perfectly normal artery may sometimes give the impression that it is definitely thickened, while at another time the same artery may feel quite soft. Generally speaking, the diastolic pressure is of more importance in hypertension than is the systolic pressure. A patient with a high diastolic pressure, even if the systolic pressure is not excessively high, may be considered to have a worse outlook than another patient with a similar systolic pressure but a much lower diastolic tension. Obviously, the height of the systolic pressure above the diastolic (the pulse pressure) is really dependent on the force of the cardiac contraction, and a high pulse pressure may only mean that the cardiac muscle is acting in a powerful manner.

Though hypertension is a common symptom in chronic interstitial renal disease, it is by no means always present. From time to time cases of chronic nephritis are encountered in which no obvious cardiovascular changes are present. In a patient whom I saw quite recently there was a history of chronic renal disease extending over many years. When first investigated this patient's blood-urea was 160 mg per 100 c cm. and his maximum urea concentration in the urine about 1·2 per cent. Examination of the cardiovascular system showed that the apex beat was in the usual position and the heart appeared to be normal in every way. The systolic blood pressure was 150 mm. of mercury and the diastolic 95 mm. Two years after this examination the patient contracted some infection and shortly afterwards passed into a uræmic state. During this uræmic period the blood-urea was 340 mg per 100 c cm and the urea in the urine was 0·9 per cent. The heart appeared to be quite normal and the blood pressure was almost exactly the same as it was two years before. Thus, a patient who had suffered from chronic nephritis for many years, and who ultimately died from uræmia, showed no evidence of cardiovascular involvement as the result of his disease. I have seen several cases of this kind from time to time. Sometimes, in the terminal stages of chronic nephritis, it happens that the blood pressure may be more or less normal or even subnormal, but this is often due to a failing heart, and is then of the gravest significance. Though it is undoubtedly the rule for chronic nephritis to be accompanied by hypertension, there are many cases in which this is not so. Chronic nephritis may slowly progress to fatal uræmia without any appreciable involvement of the cardiovascular system.

Some Observation on Cardiovascular Changes following Acute Nephritis.

In severe cases of *acute nephritis* marked hypertension with cardiac enlargement may be present. This is usually a temporary feature and the hypertension subsides when the œdema passes over, while the heart gradually returns to its former size. It is unusual to find hypertension in acute nephritis unless œdema is well marked; indeed, a rising blood pressure in the absence of œdema should suggest the suspicion that we are probably dealing with an acute exacerbation superimposed on a chronic condition. In uncomplicated cases the renal lesion often clears up and complete recovery takes place. In other patients, however, the symptoms are more persistent and the condition gradually develops into a chronic lesion. Generally, the renal efficiency goes gradually down, while at the same time the blood pressure tends to rise and the heart enlarges. This is the usual picture, but as already indicated, some of these patients progress to uræmia without any hypertension at any stage of their illness with the exception of the acute phase. In a few others a very extraordinary result is seen. When the course of the disease is followed up for some years it is found that the renal condition, as indicated by functional tests, gradually improves so that in the course of time the kidneys appear to be more or less efficient. In these cases, however, blood pressure changes begin to manifest themselves shortly after the acute stage of nephritis has passed over, with the result that these cardiovascular changes do not tend to improve with the improvement in renal conditions, but the blood pressure continues to get higher and higher, and the heart larger and larger, until ultimately cardiac failure or a cerebral hæmorrhage, or some infection closes the scene. Apparently, therefore, it sometimes happens that chronic hypertension results from acute nephritis, without any manifestation of progressive renal disease being present. Indeed, the healing of the renal lesion seems to be accompanied in these cases by a progressive rise in blood pressure. This observation may explain some of the puzzling cases we sometimes encounter in examining patients with a definite history of having suffered from a former acute nephritis. As far as I know, this aspect of acute nephritis has not hitherto been emphasised in the literature. I hope to go into this matter very fully in a publication which will appear later.

Hypertension in Hydræmic Nephritis.

In true uncomplicated hydræmic nephritis no cardiovascular changes are seen, however severe the œdema may be. The blood pressure is not raised and the heart is not affected. It is not uncommon to find a markedly high blood pressure in cases of *apparent* hydræmic nephritis, but investigation of kidney function invariably shows that in these cases the hydræmic condition is passing into chronic interstitial nephritis. Functional tests always indicate that the kidneys are inefficient, and the hypertension is but a phase of the chronic azotæmic condition. Since hypertension is so frequently associated with œdema in acute nephritis, it might at first be expected that the extreme degree of œdema so often seen in hydræmic nephritis would also be associated with increased blood pressure. Probably the fact that in hydræmic nephritis the œdema is long-continued enables the cardiovascular mechanism to adjust itself to changed conditions. Whatever the reason, it is an undoubted fact that true hydræmic nephritis does not show cardiovascular changes. I have never seen a case of the pure hydræmic type in which the blood pressure was raised when the kidney function of excreting nitrogenous waste products was quite normal. The following are the results of tests carried out on two patients suffering from excessive œdema and ascites, and apparently, as far as the clinical signs indicated, of the hydræmic nephritis type. In No. 1 the blood pressure was raised, while in No. 2 it was normal. The figures given show quite definitely that in No. 1 the hypertension was associated with azotæmic nephritis. The condition was therefore a mixture of the two forms of nephritis.

No 1	No 2.
Much albuminuria	Much albuminuria
Hyaline and granular casts	Hyaline and granular casts.
Blood-urea = 75 mg per 100 c cm.	Blood-urea = 23 mg per 100 c cm
Urea-concentration test—	Urea-concentration test—
1st hour 1·4 per cent	1st hour 2·9 per cent
2nd ,, 1·6 ,,	2nd ,, 3·5 ,,
Blood pressure = 180/125	Blood pressure = 130/85

Primary Hypertension (Hyperpiesia).

Many discussions have been waged round this form of hypertension, and it is often considered to be due to renal involvement. It is quite certain, however, that in many cases of primary hypertension there is no involvement of the renal functions, as far as can be determined by modern renal tests. There may be, and there often is, some albuminuria, but the presence of a little protein in the urine is no criterion, per se, of the presence of renal disease. In my experience, it is not uncommon for the urine to show traces of protein when hypertension is present, even when the kidneys are found to be quite efficient. High blood pressure and a very much enlarged heart with albuminuria are no indication that the cause of this condition is to be found in a primary renal lesion. This form of hypertension apparently begins as a general condition in the vascular system, and the lesion may, or may not, involve the renal vessels. If it does so renal inefficiency soon becomes manifest and the outlook is bad. If the renal system is spared, the prognosis on the whole is decidedly better. Of course, such accidents as cerebral hæmorrhage may occur at any time, but it is noteworthy that many patients go on for a great number of years with hypertension without any cerebral manifestations. In very severe cases cardiac failure may soon bring death, but on the whole the complication most to be feared from the point of view of general prognosis is involvement of the kidneys. In all cases of hypertension it is well to examine the renal function by modern tests. If the renal condition is found to be satisfactory, it may be taken for granted that the outlook is not necessarily bad, but no opinion should *ever be given unless it is certain that the hypertension has existed for some time*. It is my custom to re-examine such patients in about six months after the first examination, if the first examination indicates a satisfactory renal condition, and an examination six months later shows that the kidneys are as efficient as before, then the outlook is much better. Not very infrequently, when the kidneys are examined at an early stage of the hypertension, little or no evidence of renal inefficiency is found, but unfortunately a subsequent examination a few months later may indicate marked renal involvement. When this is the case the outlook is hopeless. On the other hand, if the kidneys do not become involved at a comparatively early stage of the hypertension, they usually escape, or at any rate are not affected to any material extent. Sometimes it is obvious on first seeing the patient that the hypertension must have existed for a considerable time, for evidence of this may be seen in tortuous arteries. In such a case it is certain that the hypertension must have existed for a considerable period, and in these cases very often the renal condition is good. Here we can say at once that, in the absence of accidents, the prognosis is fairly good, provided the hypertension is not excessive and the cardiac condition fairly satisfactory. The following results obtained from two patients with primary hypertension indicate these points:—

No. 1	No. 2
Heart much enlarged	Heart very much enlarged
1st sound booming	1st sound loud and somewhat booming
2nd aortic much accentuated	2nd aortic accentuated
Blood pressure = 195/120	Blood pressure = 210/130
Renal System, First Examination	
Urine contained albumin	Urine contained albumin
Few hyaline casts present	Few hyaline and granular casts
Blood-urea = 25 mg. per 100 c.cm.	Blood urea = 32 mg. per 100 c.cm.
Urea-concentration test—	Urea-concentration test—
1st hour 3·9 per cent. urea	1st hour 2·6 per cent. urea
2nd " 4·1 " "	2nd 3·1 " "
Condition at Second Examination Six Months Afterwards	
Heart condition as before	Heart much enlarged and rate increased. Sounds not so good as before.
Blood pressure = 200/125	
Blood urea = 23 mg. per 100 c.cm.	Blood-urea = 92 mg. per 100 c.cm.
Urea concentration test—	Urea concentration test—
1st hour 3·6 per cent. urea	1st hour 1·3 per cent. urea
2nd " 3·9 " "	2nd " 1·4 " "

In the case of the second patient the first renal examination showed little or no impairment of efficiency, but six months later the picture was quite different. Very marked renal impairment was then present, and a hopeless prognosis was given. The patient died four months later of uræmia and cardiac failure.

In patient No. 1, a medical man, the renal efficiency was quite as good on the second occasion as it was to begin with, and a fairly good prognosis was given. This patient is still alive and apparently enjoys quite good health after four and a half years. The value of renal efficiency tests is well brought out in these cases.

Not infrequently a hopeless renal condition is found to be present on the first examination, and in such a case prognosis is always extremely grave—in fact, the patient generally survives for a few months only. Despite the fact that renal efficiency is found to be unimpaired in many cases of hypertension, it is the opinion of several authorities that all cases of hypertension originate in some sclerosis of the renal arterioles. These observers admit that the renal function may be quite good, even when a very high blood pressure is present, and in order to surmount this difficulty the explanation generally advanced is to the effect that the renal vascular lesion is not sufficiently marked in these cases to interfere with the blood-supply to the glomeruli. This is the view taken by many investigators, especially those of the German school; but it is very difficult to imagine that a renal lesion which is so slight as not to interfere with renal function could possibly produce such marked general cardiovascular disturbances. Often the most severe cardiac involvement accompanied by very excessive hypertension is present in patients whose kidneys are quite efficient. The slight vascular changes found post mortem in the kidneys of such patients are almost certainly the result, and not the cause, of the hypertension. It must be remembered that there is no opportunity to ascertain histological changes in the kidneys until the condition has ended fatally. Under these conditions one would almost expect to find some changes in the renal vessels.

It is interesting to note that even the advocates of a primary renal vascular lesion being the cause of hypertension agree that a few cases are found in which no evidence of vascular changes in the kidneys can be ascertained. It appears to me that this admission strongly supports the view that in hyperpiesis the primary lesion is not in the kidney, but that the disease is a general one with a tendency to involvement of the smaller vessels in any part of the vascular system. It is true that once the condition of hyperpiesis is established the kidneys may become rapidly involved through degenerative changes in the arterioles, but not infrequently the vessels of other organs, such as the spleen and pancreas, may suffer. It is just a chance whether or not the renal vessels do become involved, though there seems to be a greater tendency for the kidney to be attacked than is the case with other organs.

In view of what has already been discussed under acute nephritis, it is possible that some cases of hyperpiesis may originate in a transient temporary lesion of the kidney, but if so, this lesion often clears up and no sign of its presence can be found when the hyperpiesis manifests itself. The question of hypertension is an extremely interesting one on which but little light has yet been thrown, but it appears to be fairly certain that many severe cases of this condition are not essentially associated with any renal lesion.

ULCERS OF THE LESSER CURVATURE OF THE STOMACH

By H. W. Carson, F.R.C.S.

Chronic gastric ulcer as it is seen by the surgeon—that is, the ulcer with a comparatively long history—is confined to a small area of the stomach wall. It occurs at or near the pylorus and along the lesser curvature. It is unknown on the greater curvature, and if it involves the anterior or posterior wall of the body of the stomach it is generally due to extension from the lesser curvature. Ulcers near the pylorus have different symptoms and require different treatment from lesser curvature ulcers, and it is to this latter group that I shall confine my remarks.

There is no generally accepted explanation of the causation of gastric ulcers. There are many theories, and much experimental work has been done, but the puzzle has not been solved. The infection theory, that ulcers arise as the result of some blood-borne infection reaching the stomach from some more or less distant focus, is widely held, and it has had the effect of making the clearing-up of obvious sepsis—e.g., in the teeth, tonsils, or nose—a necessary preliminary for all treatment of indigestion. During the course of the operation, too, the surgeon always looks for coexisting disease in the appendix and gall-bladder and deals with it as part of the operation. The tendency to recurrence after excision of a lesser curve ulcer is also a point in favour of the suggestion that the ulcer is not purely a local happening.

Two Types of Ulcer

The usual type is a sharply cut ulcer with much induration, which has a tendency to penetrate through the stomach wall. It does not, however, perforate into the peritoneal cavity, because it causes a protective thickening of the gastro-hepatic omentum, which seals it off. Later on the base of the ulcer may become adherent to the liver or pancreas, and these organs become eroded in a characteristic manner, the depression in the pancreas being egg-cup shaped—that is, its depth is almost equal to its diameter—while the depression in the liver is spoon shaped—that is, its surface is greater than its depth; occasionally both pancreas and liver are eroded by the same ulcer. The other type of ulcer extends superficially rather than deeply, and tends to involve the posterior surface and sometimes the anterior surface of the stomach. To this the name of saddle ulcer has been given. Both these ulcers may give rise to hour-glass stomach, a complication due to scar-tissue contraction resulting from the healing of the ulcer, and thus hour-glass constriction may exist with an ulcer, either healed or breaking down again—a very important point when it comes to treatment. Ulcers may be multiple, and it is fairly common to find a pyloric ulcer coexisting with an hour-glass stomach.

Ulcers of the lesser curvature occur much more often in men than in women (my own figures are 5 : 1) and are seen by the surgeon, often after a long history, generally during the decade 45–55. The history is rarely less than two years and generally more than five, which contrasts strikingly with the history of cancer of the stomach, in which patients come to the surgeon generally within three months of the onset of the symptoms.

Symptoms

The symptoms of a simple ulcer of the lesser curvature are often so characteristic that it may be possible to make a diagnosis on these alone.

1. *Pain* is the most important symptom, and it is this that brings the patient to his doctor in the great majority of cases. It is situated high up in the epigastric angle and sometimes is even retrosternal. It comes on about one and a half hours after food and is practically never relieved by food. In most cases relief is obtained by belching wind, and all cases are relieved by vomiting. At first the pain is intermittent; indeed, there may be definite intervals of complete freedom from pain—not so long as in duodenal ulcer, but still, lasting for a few weeks. The intervals become shorter, and when the gastro-hepatic omentum is implicated, or when the liver or pancreas become adherent, pain becomes more or less constant. It is at this stage that a typical pain in the back occurs, at about the level of the twelfth dorsal and first lumbar vertebræ. This is most marked when the ulcer has eroded the pancreas, but I have noted it in many cases where only the gastro-hepatic omentum was thickened. It generally means that a real crater ulcer is present. Pain now occurs both by night and day, though in the early stages night pain is unusual, thus differing from duodenal ulcer.

2. The next prominent symptom is *vomiting*. This occurs in about 70 per cent. of cases and is of the irritation type—that is to say, it occurs every day, and perhaps more than once a day, in contrast to the type of vomiting seen in pyloric obstruction. It is small in amount and consists of mucus and saliva.

3. The third most constant symptom is *loss of weight*. This is the rule and has been noted in practically all my cases. It is probably due to many causes, of which semi-starvation resulting from a restricted diet, the constant pain, loss of sleep, and the loss of fluid by vomiting are the chief.

Hæmatemesis is not at all common, but if it does occur, and especially if in large quantities, it is a very serious symptom, as it may mean that a large artery has become exposed in the floor of the ulcer. The appetite remains good, but the patient dare not satisfy his hunger because of the pain which is certain to follow.

Confirming the Diagnosis

The diagnosis is confirmed by two methods of investigation, a chemical examination of the stomach contents before and after a test-meal, and X ray examination after a barium meal. Of these there is no doubt that the X ray examination is by far the more valuable, and, indeed, so variable are the results of the chemical examination from day to day that one is placing less and less reliance upon it. But the X ray examination is of the greatest value, and so accurate has it become that over 90 per cent. of lesser curvature ulcers can be correctly diagnosed. Not only can the exact position of the ulcer be determined, but its degree of fixation, its attachment to the liver, or pancreas, and the presence of such a complication as hour-glass stomach are plainly shown. To know the exact position of the ulcer is most important, because the site of the ulcer may have a direct bearing upon the treatment adopted, since ulcers high up near the œsophagus are not well-adapted for surgical interference. On the other hand, if the ulcer proves to be a large crater ulcer, adherent to a neighbouring viscus, then we know that there is little chance that anything short of a surgical operation will cure it. An interesting point brought out by the X rays is the occasional occurrence of cardiospasm in cases of high lesser curve ulcers, and the œsophageal dilatation may be the cause of the retrosternal pain some of the patients complain of.

Examination of the abdomen does not often give much assistance. The ulcer is so high up under the liver, and so adherent, that it cannot be palpated even by the excellent method of examining while the patient is breathing deeply. Sometimes there is a tender spot in the mid-line, high up in the epigastric angle, and sometimes there is a relative rigidity of the upper rectus abdominis, but it is all rather indefinite. One must rely for a diagnosis on a correct interpretation of the history and symptoms and the confirmatory evidence of the X rays.

Treatment

The whole question of treatment is governed by the belief or disbelief in the implantation of cancer on chronic ulcer in this region. In spite of all that has been written or said on this subject we do not yet know, but many surgeons are convinced that cancer does supervene on chronic gastric ulcers in a proportion of cases. My own belief is that it happens, but that it does not happen very often. The great majority of cases of cancer of the stomach that I see have a short history, about three months on the average, and there is little doubt that in such cases the cancer is a new formation. But the mere fact that one is convinced that an occasional case may occur makes one suspect every case and plan its treatment with this idea constantly in view. It comes to a question of what may be called the direct versus the indirect attack.

By the *direct attack* I mean an operation designed to remove the ulcer, and under this heading one includes excision by knife or cautery, with or without gastro-jejunostomy, or some form of partial gastrectomy, whether it be a sleeve resection, Billroth II, or Polya

By *indirect attack* I understand the adoption of methods designed to promote the healing of the ulcer, and this will include such varied methods as duodenal feeding through the duodenal tube, or the performance of gastro-jejunostomy or of a jejunostomy The supporters of the direct attack have to convince themselves that the operation carries with it a sufficiently low mortality to be justifiable, and that recurrence of the ulcer is a sufficiently remote contingency The supporters of the indirect attack have to convince themselves that their method will cure a high percentage of cases, that the immediate mortality is low, and that recurrence is rare

Direct Attack

Holding as I do the belief that a proportion, though a small one, of chronic ulcers become malignant, I am bound to support the direct attack, but before I suspected the connexion I had abandoned routine gastro-jejunostomy because this operation, which we all used to do in the early days of gastric surgery, did not cure enough of my cases where the ulcer was distant from the pyloric sphincter My first modification was to do a local destruction of the ulcer, either by excision with a knife or burning out with a cautery, but I found a high rate of recurrence. Then I combined excision with gastro-jejunostomy and got better results Then I did sleeve resection on suitable cases and was well satisfied with my results, but could find comparatively few cases suitable for the operation Then I adopted the Billroth II method, but found it better suited for ulcers near the pylorus than for lesser curve ulcers For the last few years I have been doing resection by the Polya method more and more, and I have found the results most satisfactory In chronic ulcer the immediate mortality is about 5 per cent, the convalescence is peculiarly smooth and uneventful, and so far I have not had any ulceration occurring at the stoma suture line If the ulcer is small and I do not feel justified in sacrificing a large extent of healthy stomach, I do an excision and gastro-jejunostomy.

Indirect Attack

I gave up gastro-jejunostomy as a routine because I did not get good enough results in my lesser curve ulcer cases, and in the last few years I have operated on many cases of persistent or recurrent ulceration after gastro-jejunostomy, some even causing perforation I agree that the operation carries with it a very low mortality, perhaps 1 per cent, but its failures are too numerous in spite of many brilliant successes to recommend it as a routine Duodenal feeding and jejunostomy are in the experimental stage. Both are designed with the idea of putting the stomach at rest, though the presence of the tube in the case of duodenal feeding rather militates against this

Several questions have still to be answered, of which two are most important · (1) How long should the artificial feeding be maintained ? and (2) Will the ulcer remain healed ? The answer to the first question depends, of course, on the extent of the ulcer and the fixation of its base It used to be said that 18 months were required to ensure healing, but I feel sure the tendency has been to go on too long At a meeting of the Medical Society of London last January, Mr J. E H Roberts showed a specimen of an ulcer adherent to the pancreas, which had healed in five weeks, and I showed one eroding the pancreas which had healed in 13 weeks after jejunostomy The present method in duodenal feeding through the duodenal tube is to maintain artificial feeding for three weeks only, and 50 per cent of cures are claimed We shall know more about this matter, and also about the permanence of the cure, in a few years' time, but I feel that there may be a future for both these methods

Complications

There are two complications of lesser curvature ulcers which should be mentioned (1) hæmorrhage, and (2) hour-glass stomach

Hæmorrhage is a grave complication and one where the surgeon must keep a very cool head It is difficult to estimate the correct time for intervention, and here a close cooperation with one's medical colleague, valuable at all times in gastric surgery, is absolutely imperative The tendency is to operate, not too soon, but too late, but I do not mean to infer that surgery is the method of choice in hæmorrhage Far from it, indeed, for an operation if it has to be done must necessarily be a severe one, for some form of direct attack is essential, and it will be done necessarily on a patient who is a poor surgical risk At a discussion held at the Royal Society of Medicine a few years ago there was a general agreement that while 4 per cent represents the mortality of gastric hæmorrhage treated medically, the mortality after operation was nearer 40 per cent, due doubtless in many cases to delay I do not, of course, suggest that these cases were all chronic ulcers, nor do I believe that 4 per cent would represent the mortality in hæmorrhage from *chronic ulcer* treated medically. Three steps should be taken in every case of hæmorrhage from a chronic ulcer· (1) estimate the hæmoglobin, (2) group the blood, (3) arrange for a donor for transfusion If the hæmoglobin is reduced to 30 per cent. operation is practically certain to be fatal, even if transfusion is done But transfusion has undoubtedly improved the chances of successful surgical intervention

Hour-glass Stomach —This may arise in the course of a chronic simple lesser curve ulcer. It gives rise to severe symptoms, vomiting and wasting being the most important. I would lay down one rule in the surgical treatment of this condition In no case where active ulceration is going on may any indirect method be adopted If the ulceration is healed, well and good There is a wide choice of methods, nearly all of which will give good results Some form of plastic operation on the isthmus may be used, or the cardiac and pyloric sacs may be anastomosed (this is probably the best), or a gastro-jejunostomy may be done into the cardiac sac, or a gastro jejunostomy into both sacs One word of caution is necessary In many of these cases there is a second ulcer causing pyloric obstruction, and in such a case no purely plastic operation on the stomach is permissible If the ulcer is active, if it is malignant, and in certain cases of healed ulcer, *a partial gastrectomy is the correct procedure*, and in my experience has generally proved technically easy I have done sleeve resection in a few cases with free pylorus, but as I said before, suitable cases are not very common

Summing-up

1 Gastro-jejunostomy is not a curative operation where the pylorus is unaffected

2 Excision by knife or cautery is often followed by recurrence and should not be done

3 Excision with gastro-jejunostomy gives a fair measure of success, but may be more difficult to do, and more trying to the patient than partial gastrectomy It should be confined to small non-adherent ulcers

4 Sleeve resection is a good operation, but is practicable in only a small proportion of cases

5 An ulcer eroding the liver or pancreas should, if possible, be treated by partial gastrectomy

6 Jejunostomy or duodenal feeding may prove to be a valuable method of treating ulcers so high on the lesser curvature that direct attack is technically impossible

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THE PERMANENT TRACHEOTOMY TUBE

BY SIR STCLAIR THOMSON, M D, F R C P,
F R C S

IT is an interesting observation that tracheotomy, though an established operation of surgery for over 2000 years, is often undertaken with reluctance, is frequently delayed until its execution becomes difficult and even useless, and in its performance is not uncommonly imperfect or unsatisfactory The justification of these criticisms would require more time than can be given, but it is necessary to mention them before discussing, as I propose to do, the equally interesting observation that once a tracheotomy has been performed, and urgent symptoms relieved, many surgeons and laryngologists display an unreasonable and unwarrantable haste in attempting to dispense with the cannula

Objections to a Permanent Tracheotomy Tube

Many reasons are advanced for getting rid of a tracheotomy tube as soon as possible. Perhaps the chief one is that it is not "natural" to inspire the outside air directly into the trachea, instead of having it first warmed, moistened, and filtered by drawing it through the nose As a consequence it is asserted that the cold and dust-laden air will inevitably damage the lower air-passages and the lungs, causing bronchial, pulmonary, and other troubles. Amongst other objections raised against the permanent wearing of a tracheotomy tube are interference with speech, local discomfort, and social disability.

Nasal Respiration.

No one has more regard than I have for the importance and value of nasal respiration. I may be pardoned for justifying this by referring to my own researches (with R T. Hewlett) on the defensive mechanisms of the nose[1] and on micro-organisms in the nasal cavities[2] My observations further confirmed the value of nasal respiration as elucidated by Greville McDonald[3] and others Our conclusions that, under normal conditions, inspired air in its passage through the healthy nose, before it has reached the lungs or even the larynx, is warmed, saturated with moisture, and sterilised, are now universally accepted.

But this nasal respiration, though the physiological and desirable route is not always possible permanently It is particularly important to safeguard it in the growing child and, fortunately, we are able, by attention to adenoids, tonsils, and other conditions, to retain it or restore it before secondary effects to the developing body have resulted from nasal stenosis In the adult, however, absence of an adequate nasal air-way is by no means so important. I agree with the epigram attributed to an American colleague that "man is the only animal that breathes through his mouth, and he is a fool when he does so" Still, as man does not breathe through his mouth willingly—for nasal respiration is instinctive and mouth-breathing is an acquired habit—it need not be counted to him for foolishness Once an individual has grown to man's estate, the onset of nasal stenosis and consequent mouth-breathing does certainly reduce the protection supplied by free and healthy nasal cavities But when symptoms, in the adult, are often attributed to nasal lesions, they are more frequently due to the accompanying sepsis than to mere stenosis

Nasal Respiration in Children and Adults

Nature is full of compensations. The individual who carries on most or all of his respiration through a tracheotomy opening is doomed—so say the enthusiasts of nasal respiration—to suffer and die an early death in consequence If the individual is a child I agree as to this being a possibility above the average The young human is certainly more prone to respiratory catarrh than the adult; his unused nasal and pharyngeal cavities, from want of use, will not develop fully; his larynx, from disuse, will not expand; his defect or loss of voice handicaps his education, and his inability to mix freely with his fellows, in school and in games, is a serious hindrance to his evolution

But in the adult some of these drawbacks do not exist and others are much less urgent The body has attained full growth; education is completed; any voice defects are due to laryngeal or other lesions and not to the presence of the cannula; whilst local discomfort in the neck (i e, a pain, discharge, the need of dressings, frequent cleansing and changing of the tube) is entirely absent in a well-planned tracheotomy. Social disability hardly exists. Except that a patient who has to depend on a tracheotomy tube cannot enter the water or swim, I know of no serious social disadvantage entailed by its presence. I will relate the cases of patients who can cycle, dance, play tennis or golf, indulge in winter sports, get married and beget children, who are what the French call *canulards*—individuals compelled to wear a tracheotomy tube indefinitely. One healthy old lady of 87 whose case is on record,[4] has worn a tube for 70 years; she had seven children and never had bronchitis. In another case the patient died of senile decay at the age of 81, after wearing a tube for over 50 years[5]

Nature of the Operation.

I venture to suggest that, amongst other reasons, the two following may explain why such records are not more plentiful The first is that many tracheotomies are incorrectly performed; the tube is not uncommonly introduced through the first ring of the trachea and the cricoid cartilage, or through the cricoid and crico-thyroid membrane, or even through the latter and through part of the thyroid cartilage. As a consequence there is much catarrh and irritation in the larynx, the soft structures abundant in the subglottic area (and absent in the trachea) are infected; perichondritis may be started, and septic bronchitis is a frequent sequela Another reason is that ill-considered operative measures to dilate a stenosed larynx (so as to cure a *canulard*) not infrequently result in death When a tube has to be worn permanently the tracheotomy should be performed as low as possible in the neck and always below the first three rings. In this situation—with the opening in the trachea just above the upper margin of the sternum—a cannula is easily concealed, does not interfere with the movements of the neck or larynx, does not damage or irritate the larynx, and never sets up perichondritis

There is no excuse for leaving a patient permanently with a high tracheotomy. If the operation is an emergency one, or carried out in haste without proper assistance and surroundings, it is of course, easier to plunge a knife through a prominent cricoid cartilage, or the superficial first ring of the trachea, than it is to make a dissection lower down the neck of the more deeply situated windpipe Indeed, in certain circumstances it may be quite the right procedure to save life But once this is accomplished, and it appears that a tube may have to be worn indefinitely, then a second tracheotomy should be performed lower down in the neck and the higher opening should be allowed to close

In many instances the laryngeal condition calling for a tracheotomy can be removed, or a resulting stenosis of the glottis can be cured, and the tracheotomy tube is then abandoned with safety. Amongst such conditions I need only mention impacted foreign bodies, acute laryngitis, œdema of the larynx, diphtheria, typhoid, syphilis, and tubercle In many cases, however, the laryngeal stenosis is permanent, and attempts to remove it may sometimes fail and entail further damage or complete loss of voice, while in other cases surgical traumatism may only scar the neck, stimulate further stenosis, or encourage recurrence of arrested disease Many methods of overcoming laryngeal stenosis, such as laryngotracheostomy, are tedious, painful, often unsatisfactory, and not free from danger to life The alternative—the permanent wearing of a cannula in a well-executed opening just above the sternum—is, in adults, not incompatible with a long, healthy, and useful life It will often preserve a useful voice while avoiding a mutilating excision of the larynx.

Illustrative Cases

I have not made out anything like a full record of cases in my practice to justify this thesis But I append short notes of some ten typical cases of patients who are permanent *canulards* as a result of a variety of conditions These include (1) complete bilateral laryngeal paralysis, (2) stenosis from surgical trauma, (3) syphilis, (4) lupus, (5) tuberculosis, (6) enchondroma of larynx, and (7) epithelioma of larynx

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[1] THE LANCET, 1896, i, 86

[2] Med Chir Trans, 1895, lxxviii

[3] Respiratory Functions of the Nose, London, 1889.

[4] R Woods Brit Med. Jour, 1925, i, 733

[5] W A. Berridge Ibid., 1912, i, 816

Case 1 —*Complete Bilateral Laryngeal Paralysis* —A girl of 20 was operated on, in the provinces, for a goitre and presented herself at King's College Hospital in March, 1923, with marked stridor, even when at rest, and complete bilateral abductor paralysis A good low tracheotomy was performed under local anæsthesia Her weight, which had *fallen to 104 lb*, has now returned to 123 lb Her voice is good She works hard in a factory The tube is easily concealed by her dress and causes her no disability She has worn it for four years and has never had a day's illness No bronchitis, catarrh, or other trouble can be attributed to it

This case is well worth noting and comparing with the many operative attempts which have been made to correct the laryngeal stenosis caused by bilateral laryngeal paralysis These attempts have rarely, if ever, been successful in the human being As a rule they have entailed long, trying, and painful treatment, leaving the disappointment of a much scarred neck and deterioration or destruction of the voice In not a few cases they have been followed by death

Case 2 *Stenosis from Surgical Trauma* —(After laryngofissure for intrinsic cancer followed by wearing of a tube for eight months and then laryngostomy) A man, aged 47, consulted a colleague abroad for a mammelated growth of the right vocal cord Biopsy revealed an epithelioma Laryngofissure was performed under local anæsthesia on July 8th, 1920, with "destruction of the neoplasm with the thermo-cautery" A tracheotomy tube was left in place for nearly six months The larynx closed up almost completely and laryngostomy was performed on Oct 3rd, 1920, and dilatation with rubber tubes was maintained until the Dec 27th

I saw him for the first time five months later Both vocal cords were fixed, leaving only a much reduced glottic chink There was no evidence of disease The immobility of the cords was presumably due to subglottic cicatricial retraction Under local anæsthesia a low tracheotomy was performed The rings, through which the cannula was introduced, had evidently not been incised in any other operation The relief to the patient has been remarkable He has been able to resume golf, playing two rounds a day His voice is louder and stronger than before the tracheotomy Being low down in his neck the cannula is easily concealed and he declares he would not like to be without it He has now worn it for seven years

Case 3 *Syphilis* —In 1899 I performed tracheotomy on a woman of 34 for stridor and suffocative attacks caused by laryngeal stenosis from syphilis, for which I had been seeing her for two years I saw her 20 years afterward, in 1919, when I found her weighing 154 lb and looking in robust health She reported that she could dance and play tennis, was never subject to bronchitis She had two healthy children, aged 18 and 19

Case 4 *Lupus of Larynx* —A lady, aged 33, had lupus from the age of 5, with prolonged and varied treatment Tracheotomy was done in 1916 on account of urgent laryngeal stenosis The tube has now been worn for 11 years, during which time she has married and has a healthy child aged 9 There has been no appearance of lupus on palate, gums, cheeks, pharynx, or larynx for past four years

When she is sitting still the laryngeal air-way is abundant, so she corks up the tracheotomy cannula at meals She can even walk about with the tube closed, but as she is an enthusiastic dancer, skater, and lawn-tennis player she prefers the superaeration supplied through the opening in her neck Her voice is strong and clear The cords have regenerated and are free and mobile The stenosis is in the aditus ad laryngem, caused by scarring and contraction of the epiglottis and aryepiglottic folds It might be possible to dilate this, but patient declines any effort which would part her from her tracheotomy tube She remembers with horror the increasing dyspnœa she suffered during the year before she would accept my advice of a tracheotomy The tube is so easily concealed by chiffon and gauze that not one of her dancing partners—even, as I have tested, when they were laryngologists—has detected its presence It causes her no social inconvenience, except that she cannot enter a swimming bath! She never gets bronchitis and states that she has fewer colds than most people

Tuberculosis of the Larynx

Case 5 —A woman, aged 42, had tuberculosis in her lungs and larynx for two years before admission to King Edward's Sanatorium, Midhurst, in June, 1923 Her appendix had been removed for tuberculosis There were T B + in sputum, and both lungs were affected. There was ulceration of both cords and the right side of the larynx was fixed from a large, extensive deposit in the right ventricular band and the right arytenoid Under silence and the galvano-cautery, with sanatorium treatment, the larynx was healed in a year (by June, 1924) But the right cord remained fixed, and healing was followed by so much scarring and contraction that the glottic space was *reduced to a chink* She had dyspnœa on the slightest exertion and could not go upstairs. On Oct. 22nd, 1924, a low tracheotomy was performed under local anæsthesia. She has worn her tracheotomy tube for nearly three years She weighs 14 lb more than when she came to the sanatorium four years ago She has had no set-backs, can walk several miles, seldom rests through the day, and gets through a lot of domestic work Her sputum is negative. Her voice is good, but the glottic chink is quite inadequate for ordinary respiration

Case 6 —A woman, aged 32, was admitted to the sanatorium in September, *1911*, with *T B +* in the sputum, disease in the right lung, and a large tuberculous deposit in the interarytenoid region She had a long course of tuberculin and sanatorium treatment, but healing only took place after 18 applications of the galvano-cautery between August, 1912, and May, 1917 The larynx has, since this last date, remained soundly healed, but contraction of the scar tissue in the larynx very gradually took place and, at the end of five years (i e, in October, 1922) a tracheotomy was required

Her pulmonary trouble is quite arrested She can walk for miles and climb stairs, and easily carries on her occupation as mistress of a country post office. It is 16 years since her larynx was healed and she has worn a tracheotomy tube continuously for nearly five years It gives her no inconvenience

Case 7 —A man of 29 was sent to me in January, 1926, for "laryngeal paralysis" For 18 months he had had symptoms and for some weeks his sleep had been fitful, owing to laryngeal stridor, yet his case had not been diagnosed He had tuberculosis with T B + in the sputum The glottis was reduced to a mere chink owing to a grey, irregular, cauliflower infiltration of both vocal cords and a large cauliflower subglottic growth This appeared to spring from the left side, which was quite fixed Tracheotomy was performed under local anæsthesia and he was sent to a sanatorium

When next seen, ten months later (October, 1926), he was free from stridor and had such a wide open glottis that he breathed quite freely when the tube was blocked. The cauliflower growth had disappeared and both vocal cords had completely healed and were intact He could only talk in a whisper and it was seen that this was due to his inability to adduct the cords and close the glottis, owing to partial fixation of the arytenoid joints - This is doubtless caused by deposit and healing of tuberculous deposits in the subglottic areas, as some ulcerating granulations were visible below the posterior half of each cord This remarkable improvement has taken place although *X rays show intense infiltration all over both* lungs with some breaking down in upper and middle zones Tubercle bacilli are still present in sputum His weight is 169 lb and he can walk several miles, but it will still take some time to secure complete arrest of the pulmonary disease Perhaps before that takes place we may abandon his tracheotomy tube But its continuance can do him *no harm and* its adoption has saved his life

Case 8 *Chondroma of the Larynx* —A patient in 1914 began to experience failure of voice Tracheotomy was "contemplated" but not carried out until he had been well treated for a conjectured diagnosis of syphilis Tracheotomy had to be performed "in haste" in 1916 In 1920 Mr E B Waggett diagnosed and removed a chondroma of the cricoid, leaving a tracheotomy tube in situ The growth recurred I saw the patient in consultation in 1923 and Mr Waggett again operated in March of that year The patient has remained well since, speaking with "a very passable voice," able to conduct "without discomfort" his official duties as a consul, and wearing a valved tracheotomy tube[*]

Intrinsic Carcinoma of the Larynx

Case 9 —(Laryngofissure followed in eight months by hemilaryngectomy Tracheotomy tube worn for seven years Active life Strong voice)

A woman aged 41, was hoarse for three years before presenting herself at the early age of 33 with epithelioma invading the entire right vocal cord The diagnosis was confirmed by biopsy. Although the pathologist (A K Gordon) expressed opinion that the growth was highly malignant, it was decided in view of the limitation to cord and the free mobility of the latter, to first attempt a cure by laryngofissure. When this was performed on August 5th 1919 (eight years ago) it was noted that the growth extended close up to the margin posteriorly. Within four months there was a suspicion of recurrence but she did not present herself again until four months later when the right half of the endolarynx was fixed by growth On May 7th, 1920 through a lateral pharyngotomy, the right half of the thyroid and cricoid were removed by Wilfred Trotter and skin flaps folded it in to make a fresh lining to that side of the larynx. But the lumen of the larynx is not sufficiently large for free respiration so she has now worn a tracheotomy tube for seven years. Her voice is loud and strong though rough. She thinks nothing of a walk of six or more miles and during these years has never missed a full day's work in a pottery where she earns a good livelihood She weighs 105 lb never has bronchitis and the tube which is taken out and cleaned every eight or ten weeks causes her no inconvenience. She never has bronchitis

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[*] E B Waggett Jour of Laryn, 1921 No xli 338 and 1925, No 1, 27, StClair Thomson Jour of Laryng 1925, No 1 1

CASE 10.—(Laryngofissure on one cord 11 years ago Regrowth on opposite cord seven years afterwards. Second laryngofissure. Tracheotomy tube worn for four years Good health useful voice)

A lady aged 46 was hoarse for 18 months before being operated on in August, 1916 for epithelioma invading all the right vocal cord which was sluggish in movement. The diagnosis was confirmed by biopsy She remained free from disease, in excellent health with a voice quite as good as when she presented herself before operation, and was able to gain her livelihood as a companion with a fair amount of reading aloud as part of her duty After seven years of healthy and useful life during which she neither wore a tracheotomy tube nor had other disability she returned with a nodular cauliflower, dimpled growth on anterior half of the left (the opposite) cord For this the patient underwent her second laryngofissure on Dec 6th, 1923.

She has worn a tracheotomy tube permanently since then Nearly four years have passed. In her larynx one sees two cicatricial cords. The right one is quite fixed (the original cord was removed in its entire length) but the left moves fairly well and allows of some voice. The glottic space—although naturally much reduced after a double laryngofissure—is quite adequate for respiration and when the patient is sitting still she corks up the tracheotomy opening and at meals for instance can carry on conversation in a low rough whisper without any embarrassment. But, as the air-way is not sufficient for active life, she can work and walk about with the silver cannula concealed in her neck, still fulfilling her duties as a companion The tube is only taken out for cleansing purposes every three months There is no mucus or discharge around it. She gets no winter cough. She has never had bronchitis

How much healthier, happier, and more useful are these two women than they would have been had the entire larynx been excised! They have suffered no harm and but little inconvenience from wearing a tracheotomy tube for, respectively, seven and four years

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HOSPITAL COÖRDINATION AT SHEFFIELD.—An advisory committee has just been formed, the object of which is to bring about closer coöperation and coördination among hospitals in an area within 25 miles of Sheffield and to develop their efficiency The scheme includes four hospitals in the city with 1050 beds and eight outside with about 700 beds Autonomy will in no way be affected nor will the functions of any voluntary hospitals committee be interfered with.

THE LATE DR. JAMES M. WILSON—Dr. James Mitchell Wilson late medical officer of health of the East Riding of Yorkshire died at Beverley on May 29th at the age of 83 He was born at Perth and was educated at the Dollar Academy and at the University of Glasgow, where he graduated in 1867. After a period of practice at Chatteris he decided to take up public health work and in 1877 took the D.P.H. at Cambridge. Five years later he proceeded to the M D degree at Glasgow. He held the appointments of medical officer of health for Doncaster Borough and for Rochdale Borough and went to the East Riding in 1901. He was also a past president of the East Yorkshire branch of the British Medical Association. Among his publications was a Note-book for Inspectors under the Dairies and Cowshed Orders. He leaves a widow and three sons.

GENERAL MEDICAL COUNCIL.

SUMMER SESSION, 1927.

(*Concluded from p 1202*)

APART from the hearing of charges against professional conduct reported in our last issue, a few matters of more general interest came before the Council.

An Incorrect Entry in the Medical Register.

The Council held an inquiry into the circumstances under which the name of John Richard Brinkley had come to be entered in the Register, and whether or not the entry was incorrect. Mr. Brinkley was a resident of the United States who lived at Milford, Kansas and qualified at the Eclectic School there. Wishing to qualify for the English Register, he had gone to Italy, where reciprocity with this country existed, and had passed the examinations which entitled him to the degree of M.D. Pavia in 1925. He had not studied in Italy, but his American qualification had been accepted. Subsequently, however, the registration authorities at Rome had cancelled his Pavia degree on the grounds that they were not satisfied that the standard required by the Eclectic School was adequate to entitle a graduate of that body to practise in Italy. Therefore, said the Council's solicitor, the entry was incorrect and could not be allowed to stand, but he had no intention whatever of suggesting that Mr Brinkley had acted in any way that was not completely above board. The Council decided to erase the entry, finding that it had been made upon information tendered in good faith, but now ascertained to be incorrect. They directed that the registration fee be returned to Mr. Brinkley.

Covering Uncertified Persons Practising as Midwives: Alteration in Warning Notice.

On the recommendation of the Executive Committee the Council decided to amend the Warning Notice regarding association with uncertified persons practising as midwives to read as follows:—

7 Whereas it has been made to appear to the Council that certain registered medical practitioners have from time to time, by their countenance or assistance or by issuing certificates notifications or other documents of a kindred character enabled uncertified persons to attend women in childbirth otherwise than under the direction and personal supervision of a duly qualified medical practitioner contrary to law; and whereas such conduct is in the opinion of the Council discreditable to the profession of medicine and calculated to defeat the purpose of the Statutes made in the public interest for the protection of mothers and infants, notice is hereby given that any registered practitioner who is proved to have so offended will be liable to have his name erased from the Medical Register

Committees and Other Business.

The Council directed the Registrar of the Dental Board to restore to the Dentists Register the name of Samuel Robertson Crosbie on fulfilment of the prescribed requirements

The English Branch Council, which met on Wednesday, appointed Mr Robert Milne, F.R C.S., an assistant examiner in surgery to the Apothecaries' Society of London for a period of five years.

The Chairman of the Finance Committee, Sir Holburt Waring reported a surplus for the year 1926 of £5267 12*s* 1*d*. The total number of registrations was 1947, as against 2569 in 1925 and 2796 in 1924.

The Education Committee have completed the draft of their report on the progress made throughout the country towards the readjustment of the medical curriculum in accordance with the resolutions of the Council adopted on May 26th, 1922. They hope to present the completed report to the Council at the November session.

The Council learned with regret the decision of Dr. J. T. Mackay to resign from his appointment as chairman of the Education Committee.

The Chairman of the Examination Committee, Sir Norman Walker, reported that the number of candidates for examination fell in 1926 to 2273, a figure only slightly higher than that for 1913 No report would be issued on the working of the simultaneous pass in anatomy and physiology until the Committee had further information

Mr Norman C King was unanimously re-elected Registrar to the Council

MEDICINE AND THE LAW

Expert Evidence and the Length of Trials

Some months ago Mr Justice Tomlin proposed to make a rule that in future the number of expert witnesses to be heard in any case before him should be limited to two from either side He was trying a claim made by a colliery company against the Swansea Corporation, it being alleged that the defendant body in filling one of its reservoirs would flood and damage coal-mines belonging to the plaintiff company The hearing, which began before last Christmas, actually occupied 60 days, and judgment has just been delivered After finding for the defendants and explaining his reasons, the learned judge drew attention afresh to the increase in late years of cases involving expert evidence, the greater length of such cases, and the growing elaboration of their preparation What he described as the "overloading" of the case placed the parties with the lesser resources at a grave disadvantage, as well as delaying the course of general business in the courts In every case of that kind, observed his lordship, there were generally many irreducible and stubborn facts upon which agreement between experts should be possible He regarded the expert advisers of the court, whether legal or scientific, as being under a special duty to the court to limit in every possible way the contentious matters of fact to be dealt with at the hearing He thought that all concerned in litigation of this class must in future, in the preparation of their cases, address their minds more closely to the restriction of the area of dispute

The hint will not be lost upon medical and scientific witnesses, though it must be remembered that rules of practice appropriate to hearings in the Chancery Division have no necessary application to trials elsewhere Cases about reservoirs and coal-mines raise questions of geological and engineering facts on which experts may be able to reach some large common measure of agreement in advance of the actual hearing in court Medical questions such as arise in litigation under the Lunacy Act or in criminal trials cannot so easily be reduced to simple facts and figures Personal liberty or professional reputation may be at stake, and it may be inevitable that every fact and inference should be keenly contested Nevertheless, medical witnesses, particularly in accident or workmen's compensation, will always earn the gratitude of the court if they narrow the issues of fact as much as possible and take pains to exhibit matters of agreement as well as matters of dispute Nothing gives so much strength and independence to an expert witness's opinions as a readiness to admit a point which cannot reasonably be controverted

If Mr Justice Tomlin's observations were universally adopted and extended, they would have the effect of converting the expert witness, who at present is employed and paid by either plaintiff or defendant for partisan purposes, into a quasi-judicial officer competent to formulate the issues in the litigation and encouraged to concentrate upon obtaining the maximum of agreement between the two sides In other words, he would become an assessor of the court, or even a referee Judges have considerable powers at present of appointing and employing expert assessors, it is sometimes remarked that these powers are too little employed The court is also fully competent to conduct its proceedings in such a manner as to avoid a case being unnecessarily protracted In the Swansea Corporation case not all the blame must be put upon the scientific expert witnesses, time could have been saved by the legal experts also.

Alleged Negligence in Removal of Tonsils

In a recent action in the Ulster King's Bench Division before a special jury, a father claimed £1500 damages for personal injuries to his daughter, aged 6, on the ground of negligence in carrying out an operation at the Benn Hospital last November The defendant was Dr I A Davidson, a member of the surgical staff of the Benn Hospital, and also of the Ulster Hospital for Women and Children After evidence for the defence had been given by the defendant himself, Mr James A Craig, M R C S, Dr William Dickey, who had administered the anæsthetic, and Mr W M Killen, senior surgeon at the Benn Hospital, a verdict was given in favour of Dr Davidson, who was defended throughout by the London and Counties Medical Protection Society

The plaintiff's claim was that, as the result of the operation for the removal of adenoids and tonsils, his little daughter was unable to take solid food, could not drink in the ordinary way, and developed a nasal intonation in her voice at times From the evidence it appeared that the adenoids and the left tonsil were cleanly removed, but the right tonsil was found to be adherent, in the attempt to remove the latter the uvula was cut off Dr Davidson stated that the operation of removing adenoids and tonsils was one which he had himself performed some 12,000 times and that on this occasion he followed the same procedure and took the same precautions as on other occasions He said the removal of the uvula was an accident which had occurred to him only twice in his career and might occur to the best surgeons in the world He claimed that he had given his best skill and attention to the case In cross-examination he said that he did not know until next morning that the uvula had been removed, and could even now do no more than conjecture the actual moment at which the accident occurred Negative evidence as to the value of the uvula was given by other witnesses, questions were also asked as to the practice of telling or not telling the parents forthwith when such an accident had occurred From the legal point of view there are certain accidents in which negligence is *prima facie* assumed, in the legal phrase *res ipsa loquitur*, the facts speak for themselves This case was not one of these, and, as the jury found that Dr Davidson had exercised reasonable skill and care in the operation, judgment was entered in his favour

VIENNA.

(From our own Correspondent)

The Action of Hypnotics

Prof P Pick recently addressed the Vienna Medical Society on the subject of hypnotics Although, he said, the narcosis produced by inhalation is very similar to that which results from hypnotic drugs, the seat of action is different in the two cases Inhalation generally paralyses first the sensory portion of the cortex, whereas the action of the hypnotics is first directed towards the motor areas and those governing the ocular, labyrinthine and proprioceptive reflexes Inhalation can, of course, be stopped or controlled at any moment, whereas the narcosis induced by hypnotic drugs only disappears gradually as the drug is disintegrated or eliminated By experiments on animals in which the cerebral cortex and corpus striatum has been removed, it has been shown that most of the hypnotics—e g , alcohol, paraldehyde, chloral, urethane, veronal, and luminal—are active in decorticated animals, morphine and scopolamine also cause sleep in thalamic animals

The point of action of most hypnotics is the brain-stem, but the condition of the cortex is, of course, of great importance, and cortical irritation will prevent sleep unless it is controlled—e.g., by bromides or (experimentally) by severing the connexion between the cortex and brain-stem. Calcium salts excite the cortex and thus interrupt the sleep produced by magnesium, but they have no effect on the decorticated animal. Prof. Pick divides hypnotics into two groups, cortical and thalamic. The first includes alcohol, bromide, paraldehyde, and chloral, whilst derivatives of urea, such as veronal and luminal, belong to the second, together with isopral and chloretone. Morphine and scopolamine work in both ways. The most active hypnotics, he argues, are those which combine the effects of the two groups, their cooperation being termed synergism. It has been shown that combinations such as luminal and scopolamine, or chloretone and paraldehyde, are very effective. Even better results are obtained when urethane and medinal is combined with theophyllin, which facilitates penetration of the tissues.

In the discussion following Prof. Pick's lecture, Dr. Dattner pointed out that the physician should distinguish between disturbance before sleep has begun, disturbance of the sleep itself, and disturbance of the sleeper. The first is often due to mental overwork, to caffeine or nicotine, or to emotional causes. The habit of premature awakening so often seen in aged or neurotic people can be combated by improving the circulation, thus promoting better oxygenation of the tissues. A radical change of diet is often very useful, and it is especially desirable to cut down the supply of the exciting substance calcium.

Restriction of the Number of Medical Students.

The two professors of anatomy in the University of Vienna point out that the number of students applying to them for instruction is far in excess of the number which can be taught in the institutes; in the present summer term there have been no less than 600 applicants, of whom only 148 are Austrians. As little dissection is done during this term it has been possible to give instruction to them all, but difficulties will arise in the winter, for there are not enough subjects for dissection, and the professors suggest that the number of first-year students should be restricted so as to allow those taking the course to dissect all parts of the body at least once. It is only possible to get from the hospitals those bodies which are not claimed by friends, and with the decrease of patients at hospitals and the increase of pious burial societies these unclaimed bodies are getting very scarce. At present the two Viennese institutes of anatomy have only a small stock, and the professors suggest that no foreigners should share in the teaching facilities until a place has been found in the schools for every Austrian. The Senate and the public receive this proposal with mixed feelings. The general opinion is that it would be a mistake, over so small a matter, to endanger the standing of Vienna as the chief university in Eastern Europe. It must be possible, it is felt, to ensure by law that there shall be an adequate supply of subjects for the dissecting room. A large section of the public suspects that the proposal to select a limited number of students is really aimed at the Polish and Hungarian Jews, who flock to Vienna because feeling in their own countries is strongly anti-Semitic.

Medical Graduation in Austria.

During the winter term the three Austrian universities—Vienna, Graz, and Innsbruck—have conferred the degree of M.D. on 427 candidates, entitling them to practise medicine. Of these, 252 were conferred at Vienna, 115 at Graz, and 60 at Innsbruck, and it is interesting to note that the percentage of foreigners was 65 at Graz, 40 at Vienna, and 30 at Innsbruck; 7 came from Egypt, 1 from the United States, 74 from Bulgaria, 7 from Italy, 30 from Poland, 31 from Roumania, 54 from Yugoslavia, and 5 from other countries.

PARIS.

(FROM OUR OWN CORRESPONDENTS.)

Celebration of Two Centenaries.

THE French medical profession has been celebrating two centenaries. It is 100 years since the death of Pinel and the birth of Vulpian and the two events have fittingly been commemorated together, for these two men represent two different epochs. "With Pinel," wrote Prof. E. C. Achard, "there disappeared a medicine which seems to us antiquated—a medicine of mere observation, ignorant of true scientific interpretation because it knew hardly anything of pathological anatomy, of physiology, or of precise ætiology, a medicine devoted to verbal dissertations, to nomenclature, and to classification. With Vulpian arose a generation which was already instructed in morbid anatomy and perfected it by histological investigation, which invoked new knowledge of physiology to interpret pathological processes, and which began to emphasise the rôle of microbic organisms as a cause of disease."

The Prevention of Tuberculosis.

At the recent national congress on tuberculosis, which was held at Lyons, Dr. Leon Bernard and Dr. Poix, of Paris, reported on the care of the pre-tuberculous child, dealing with preventoriums and the placing of children in families, as suggested and carried out by Grancher. The plan is to entrust the children to doctors in the country who choose homes for them among the peasants and give them the necessary care and supervision. On the same basis is the scheme for boarding out the babies of tuberculous parents, of which such excellent results are reported. Whereas the mortality among those who remain in their infected homes is about 80 per cent., the percentage death-rate of those who are isolated from birth is less than six, whilst that of infants already exposed to infection but transferred to better surroundings is only about eight.

Intracardiac Remedies.

In pulmonary diseases drugs given by the mouth are often inactive, those passed into the trachea are largely coughed out, whilst with intravenous injections the place of entry is always so far from the lung that the effect of a massive dose is lost by dilution before the remedy gets to the seat of the disease. On these grounds Cherechewski, Florentin, and Lesbouyries suggest—though it seems a little risky—that medicaments should be injected straight into the right side of the heart, whence they would be carried directly into the pulmonary circulation. Their experimental research on the dog has proved, they say, that the procedure is not dangerous, and they consider that it opens a way to the better treatment of pulmonary tubercle in man and of the same and other infections in animals. They are pursuing their experiments with a view to applying the results tentatively to human beings.

Yellow Fever.

The Académie de Médecine has received a report of the cases of yellow fever observed in French West Africa between July, 1926, and February, 1927. The epidemic began in the British colonies of the Gold Coast and Nigeria. The neighbouring districts of Dahomey and Haute Volta were well protected, and only two cases were reported from each of them; but in Senegal, where the white population lives in close contact with the natives, the number of victims was much greater. The fact that the cases were scattered over an immense area made sanitary measures very difficult. Nevertheless, thanks to immediate and rigorous precautions, the number of severe cases was relatively small (34 cases with 29 deaths). Noguchi's vaccine and serum were used with advantage, whilst efforts to prevent the disease from spreading included the isolation of patients, the destruction of stegomyia in infected houses and those adjoining, the discovery and clearance of the breeding-places of larvæ, and the supervision of travellers

Synthalin

Chabanier and Lebert have recently described their observations on the treatment of diabetes mellitus with synthalin They have investigated 27 cases of which 19 were severe, and they have come to the conclusion that the remedy is not by itself sufficient for treatment where the condition of the patient is serious In the dosage needed to get the same results as with insulin the drug generally upsets the mucous membrane of the stomach or intestine, so that its administration has to be stopped Even where the disturbance is not so great as this the synthalin has a bad effect on the appetite, sometimes abolishing it altogether, at the same time the patient gets thinner and shows an asthenia which is in contrast to the well-being which insulin produces The suggestion that alternate courses of the two drugs should be given does not seem to have much to recommend it Synthalin has a good effect on patients with mild diabetes, but here also it is commonly found that it cannot be given at all continuously In its present form, therefore the remedy is apparently not of much practical value.

Diphtheria.

The mortality from diphtheria during the outbreaks last January was exceptionally high, ranging from 12-18 per cent in the non-malignant cases to 50 per cent in the malignant forms This mortality was generally due to associated and secondary affections, especially streptococcal and pneumococcal Empyema, pneumococcal arthritis, and broncho-pneumonia were particularly noticeable Influenza was likewise an important contributory cause of the mortality

A method of nasal vaccination against the disease has recently been tested by Lesné and others in a series of 124 children, the Ramon anatoxin being employed Immunity was judged by the Schick test The nasal method appeared satisfactory, but the investigators do not recommend it as a general substitute for subcutaneous vaccination

Intraspinal Analgesia

A wave of opinion adverse to the intraspinal method of producing analgesia seems to be developing in France, a number of deaths and failures having been recently reported The method is being advised for occasional use only

Several cases of iodism following injection of lipiodol into the bronchi have recently been reported from different hospitals at Paris

A physician in the south of France received, during the process of opening a tube of small-pox vaccine, a droplet in the left eye Ensuing keratitis, iritis, and iridocyclitis became aggravated, and enucleation of the affected eye was unavoidable This case illustrates the precautions which should be observed in manipulating small-pox vaccine

The International Commission on Occupational Diseases, which was formed in 1906, has just been reorganised Some 17 countries are represented The secretary, Dr L Carozzi, may be addressed at Geneva, Switzerland

BERLIN.

(FROM OUR OWN CORRESPONDENT)

Congress of the German Surgical Association

IN a paper at the recent surgical congress Dr Rost (Mannheim) said that 10 per cent of deaths after operation were due to heart troubles He also drew attention to the danger of operating on patients who have recently had influenza, respiratory complications being very common in those cases In 1926, he said, pulmonary embolism increased considerably in frequency, for some reason unknown There seemed to be no reliable means of preventing or curing post-operative pneumonia, but pneumococcal serum and inhalations of CO_2 proved valuable sometimes As regards preparation for operation it was very important to attend to the bowel, but no strong purgative should be given

Prof F Sauerbruch (Munich) discussed the origin and surgical treatment of bronchiectasis, which was not, he said, a sequel to bronchitis or broncho pneumonia, as was generally supposed, but was due to congenital cystic dilatation of the bronchi Eighty per cent of the lesions in bronchiectasis affected the left lower lobe, this being due to the position of the Cuvier's duct, which hindered the development of the left lung Bronchiectasis and bronchial cysts might exist a long time, not causing any symptoms until infection occurred Cure was possible by radical removal of the left lower lobe

Prof V Schmieden (Frankfort) said that in pancreatitis the infection may come from the gall-bladder, from the canal of Wirsung, from the veins, lymphatic vessels, or from a penetrating duodenal ulcer, or it may follow embolism of the pancreatic artery Infection from the gall-bladder is the cause in two thirds of the cases, and in cholelithiasis, according to Prof Schmieden, the gall-bladder should always be removed, cholecystotomy being insufficient because it does not reduce the pressure in the gall-bladder Apart from necrosis, which sometimes occurs rather early, the dangers connected with pancreatitis are hæmorrhage and acute peritonitis with septicæmia A correct diagnosis, Prof Schmieden said, had been made in 40 per cent of 1510 cases described in the literature Early operation was nearly always indicated In cases where the condition at first produced only an œdema of the pancreas, 76 per cent of the patients were cured by operation Delay was only justifiable when there was severe collapse or where the surgeon, consulted rather late, found a fairly normal pulse-rate and might decide to wait until an abscess was formed Where the diagnosis was not quite certain and there were severe abdominal symptoms suggesting pancreatitis, it was undesirable to wait until the full symptoms had developed The general mortality of cases in which operation was done was 50 per cent The operation consisted of wide incision of the capsule with drainage, sometimes the gland itself was also incised

Prof Paul Clairmont (Zurich) stated that in a series of 1298 cases of appendicitis conveyed to the Zurich Surgical Clinic on behalf of practitioners, the diagnosis was erroneous in 20 per cent This statement must not be looked upon as a reproach to the general practitioner, on the contrary, it was satisfactory to find that medical men were growing more and more accustomed to have every suspicious case investigated by a surgeon In 85 of the cases a correct diagnosis was subsequently made at the clinic, whilst in 6 per cent of those operated on it was found that the disease was not appendicitis Prof F Konig (Wurzburg) said that in doubtful cases the surgeon ought to operate because otherwise practitioners would tend to wait before sending up urgent cases.

Avertin

Reporting on the new anæsthetic, E 107, or avertin,[1] Dr F Eichholz (Elberfeld) said that it is quickly absorbed, that there are no complaints after narcosis, and that it has no undesirable action on the circulation and the blood pressure Disturbance of respiration occurs only when double the narcotic dose is administered Dr Butzengeier (Elberfeld) said that to obtain narcosis 0 1 g avertin per kg of the patient's weight should be given by enema 20 minutes before operation The patient, as a rule, *begins to sleep after a few* minutes If he does not an additional dose, one-quarter of the first, may be administered, but the total amount given should never exceed 0 15 g per kg The patient sleeps for three or four hours and does not vomit Persons with disease of the colon are not suitable subjects A few drops of ether may be given, if considered necessary, to accelerate the narcosis Prof Nordmann (Berlin) offered a warning against producing full narcosis with the compound alone ; in 40 per cent of his 250 cases a few drops of ether had to be given to aid its action Prof F Sauerbruch had observed three cases in which avertin caused erosion of the colon with fatal results Prof E Unger (Berlin) recommended that the drug should be dissolved in a mucinous fluid In about 70 per cent of cases, he said, the narcosis was successful, but eight patients had symptoms of severe asphyxia Dr. Melzer (Konigsberg) reported that in 100 cases there was no irritation of the colon , on the other hand, there were in this series 18 with cardiac disturbance, four deaths occurring among them The main drawback to the method is that the dose cannot be regulated during the narcosis, so that the fate of the patient depends on the amount originally given

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[1] THE LANCET, April 2nd, p 718, and May 14th, p 1037

X Rays and Childbearing

In the *Archiv fur Gynakologie* Dr Werner has published an article dealing with the remote influence of X rays on the offspring of women who have been irradiated The effect of treating excessive hæmorrhage or fibroids by X rays is, he says, to render first abortions more frequent Whereas the usual number of abortions is one to every five normal births, the ratio where X rays have been applied is one abortion to every two births In a series of 22 women pregnant after Rontgen treatment there were 45 pregnancies, of which only 27 lasted to term Five of the infants died very young and of the 22 that survived one suffered from congenital stenosis of the trachea, one from congenital cardiac disease, one from rickets, one from tuberculosis, and one from general debility Two-thirds of them had a weight considerably below the normal It follows, according to Dr Werner, that X rays have a very unfavourable action on the offspring and that this influence will certainly become more marked in the generation to come The treatment of pregnant women with X rays is, he says, still more undesirable, many infants being born as idiots or microcephalics.

A committee presided over by Prof Schilling and Prof A Magnus-Levy has been investigating 2820 cases of pernicious or Addisonian anæmia The features of the disease, it is stated, have not altered, but three times more cases were notified in 1924 than in 1915 The suggestion is made that the war, the blockade, and economic distress have contributed to this increase.

The price of German scientific books is sometimes regarded as excessively high abroad According to the *American Review for Biology* this idea is mistaken The average prices for a page in a scientific book may be expressed (in cents) as in England 1 28, in the United States 1 12, in Germany 1 09, in France 0 35, and in other countries 1 51 The low price of French books is attributed to the state of the French currency

Public Health Services.

MENTAL HOSPITAL REPORTS

The *City of London Mental Hospital* at Stone, Dartford, has a remarkably clean bill of health to report for 1926 There was but one case of tuberculosis, and that a latent one, and no dysentery or other epidemic or zymotic disease For 600 mental patients this is a record that must be hard to beat Thirty patients died during the year, a death-rate of 4 2 Post-mortem examinations were held in 12 instances The recovery-rate was 55 8 per cent These figures do not include the 38 voluntary boarders admitted during the year There is a diminution in the number of rate-aided patients, and 70 per cent of admissions belonged to the " private " class An operating theatre, dental surgery, X ray room, and pathological laboratory have been equipped and brought into use Ultra-violet ray therapy is a regular method of treatment, and a section has been equipped for the malarial treatment of cases of general paralysis More wireless sets have been installed, and the entertainments for the patients are many and varied The farm has produced all the mutton, pork, milk, eggs, poultry, and vegetables needed by the institution Research on the variability of certain constituents of the blood in mental disease is being carried on in the laboratory The visiting commissioner was well satisfied with what he saw, and remarks " So much has been done to bring this hospital into line with modern ideas that I cannot but congratulate Dr Robinson and the committee on all that has been completed " There are open door and club wards, and parole is allowed beyond the estate to 73 patients and within the grounds to 152 more A sister tutor has been appointed, and four nurses obtained their M P A certificate during the year, while three more passed the preliminary examination

The *Glasgow Royal Asylum*, which publishes its 113th annual report for the year 1926, is another institution where the proportion of voluntary inmates is steadily increasing Of the 148 patients admitted during the year, 78 were uncertified The average number resident was 533, which constitutes a record , the death-rate was 8 8 per cent and the recovery-rate 34 6 per cent There was a small outbreak of scarlet fever and one case of typhus Rapid progress is being made with the construction of an operating theatre and dental room, and a central kitchen and a refuse destructor are being built Two general paralytics have been treated by malaria, and one has begun to show improvement Over 400 attendances were recorded at the psychiatric out-patient clinic of the Western Infirmary The occupational therapy department has organised a scheme of consideration of each patient as an individual, so that work can be adapted to each Women who are very ill do simple raffia, woolwork, needlework, or card weaving More convalescent cases do batik and vety colour work, and there is a small room for a noisy or disturbed patient who works best alone In the central hall there are a series of tables for all kinds of crafts, and parole patients are free to come and go as they like On the other side of the hall is a room for cooperative men patients, doing cane and basket work brass repousse work, and chip carving The second room is a carpenter's shop, and for more difficult cases there is wool-winding, sand-papering, polishing, picture pasting and brushwork, among other occupations The instructress presents an interesting special report on this work 298 patients saw the dentist during the year , very few refused treatment

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED MAY 28TH, 1927.

Notifications —The following cases of infectious disease were notified during the week —Small-pox, 266 (last week 313) , scarlet fever, 1478 , diphtheria 845 , enteric fever, 38 , pneumonia, 941 , puerperal fever, 32 , puerperal pyrexia, 107 , cerebro-spinal fever, 7 , acute poliomyelitis, 9 , encephalitis lethargica, 28 , dysentery, 9 , ophthalmia neonatorum, 114

Cases of small-pox were notified from the counties of London 1 (Hackney), Derby 8, Durham 112, Lancaster 23, Northumberland 8, Nottingham 2, Stafford 1 (Bilston), Yorks North Riding, 7, West Riding 39, Glamorgan 1 (Gelligaer), Monmouth 31

Deaths —In the aggregate of great towns, including London, there were *2 deaths* from small-pox, 1 (0) from enteric fever, 42 (2) from measles, 11 (5) from scarlet fever, 22 (4) from whooping-cough, 26 (9) from diphtheria, 47 (9) from diarrhœa and enteritis under 2 years, and 43 (7) from influenza The figures in parentheses are those for London itself Of the two deaths from small-pox one was registered from the metropolitan borough of Hackney, the other from Hendon (Middlesex), referred to a death which occurred during the week ended May 11th

Correspondence.

"Audi alteram partem"

THE TOTAL ECLIPSE OF JUNE 29TH

To the Editor of The Lancet

Sir,—May I be allowed to point out the danger of *not* seeing the eclipse? The question of the dark adaption of the eye before the total phase seems very largely to have been ignored in the instructions given to the public, yet it is a matter that will make all the difference between seeing the corona well and seeing it badly—possibly, even, between seeing it and not seeing it.

In the days when visual observations of the corona were all-important the blindfolding of the observers five or ten minutes before totality was a recognised part of official programmes. On June 29th this precaution, or its equivalent, will be enormously more important than usual, for three reasons:—

1. Since the moon's shadow on this occasion is very narrow (about 15 miles broad) the brightness of the surrounding sky will be great and will largely "swamp" the coronal light.
2. Since the sun is at an extremely low altitude the light of the corona will be considerably diminished by atmospheric absorption.
3. Since totality only lasts about 20 seconds the eye will not have time to become dark-adapted. In fact, except for its bright lowest layers, the corona will be very difficult to see.

I do not suggest blindfolding. Few would do it, and those that did would not know when totality had started; some would remove the bandage too soon and undo all the good of blindfolding, others would remove it too late and miss part or all of those few seconds of totality. But I do suggest the desirability of putting on some dark, opaque mask—say, lined velvet—in which there are two eyeholes occupied by deeply tinted screens. The mask should tie tightly behind the head and so fit the face that no light can get in round the sides.

The screens must be the darkest that will still allow the sun just to be visible. Their density of tint will depend on the condition of the sky at the place and time in question. The simplest device is a number of strips of fogged photographic film of different densities. The darkest that still shows the sun should be used, and held firmly against the front of the mask. In that way one will be able to watch the partial phase and still achieve dark-adaption of the eye when the mask is slipped off at totality.

I know a lot has been written about the dangers to the eye of ultra-violet light and the inadequate protection of fogged films, but at the coming eclipse ultra-violet light will not enter into the question. At such a low altitude of the sun it will (unfortunately for astronomers) be almost entirely absorbed by the atmosphere.

But if the ultra-violet light during the partial phase can be ignored, the visible violet and blue light during totality should be taken account of. Since "scattering" of light in the air is inversely proportional to a high power of the wave-length, the visible light of the sky is mainly violet and blue. Hence we may hope to diminish the "swamping" of the corona by sky-light by watching totality through a simple yellow-tinted photographic light filter—one, I suggest, of which the "exposure factor" does not exceed 2.

I am, Sir, yours faithfully,
R. L. Waterfield.

The Royal Astronomical Society, Burlington House,
June 4th, 1927.

THE *Z* NOTION IN PSYCHOLOGY

To the Editor of The Lancet

Sir,—The review in last week's issue of The Lancet of Prof. McDougall's "Outline of Abnormal Psychology" prompts me to offer a hint to psychologists and to physicians. Apparently the view is spreading that a man is a conglomeration of cells, each of which has a personality that finds its self-expression in self-sacrifice to promote the continuance of the man. So far so good. Let the student of conduct take a step further and regard man as fundamentally and principally a chance unit in the conglomeration of creatures, animal and vegetable, that find their self-realisation in sacrificing themselves to ensure the continuance of the fundamental arch-creature that consists of all protoplasm that ever was, is, and will be; a creature that may be visualised as a thin, hollow sphere of some 8000 miles in diameter and may be symbolised in speech and writing by the letter Z. The theory, supported by nothing but by man's egoism, that the human race is a "whole" in the scheme of things has ever been a philosophical failure; it has made ethics, not only to the Greeks, foolishness, and psychology a castle in the air. The *Z* notion, carefully followed to its logical conclusions (each step checked by painstaking observation) can explain why man does as he does. It provides an entertaining field for philosophical speculation on an unhackneyed path, and—what to me matters most—it is the key to a treatment of the folks who have epilepsy that does more good than harm.

I am, Sir, yours faithfully,
Alan McDougall.

The David Lewis Colony, Warford, Cheshire,
June 5th, 1927.

EXACERBATION OF CHOLECYSTITIS AFTER INJECTION OF SODIUM-TETRIODO PHENOLPHTHALEIN

To the Editor of The Lancet

Sir,—The following case seems to me to be of interest in showing a local disturbance due to injection of this dye in a case of cholecystitis. The patient, aged 59, housewife, was admitted to Charing Cross Hospital under Mr. N. C. Lake on March 30th last with symptoms pointing to a recent attack of cholecystitis. The injection of 30 c.cm. of the dye for cholecystography was immediately followed by a rise in temperature and lighting up of cholecystitis. Cholecystectomy was performed on the following day and all these symptoms rapidly disappeared. I do not think this complication in cholecystography has been reported before.

I am, Sir, yours faithfully,
E. A. Crook,
Surgical Registrar, Charing Cross Hospital.
June 3rd, 1927.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

Whitsuntide Recess

The House of Commons adjourned for the Whitsuntide recess on Thursday, June 2nd. The House will meet again on Monday, June 13th.

Early Shop Closing and the Health of Young Girls

Dr. Marion Phillips and Mrs. Adamson gave evidence on May 31st on behalf of the Standing Joint Committee of Industrial Women's Organisations before the Departmental Committee appointed by the Home Secretary to inquire into the working of the Shops (Early Closing) Acts. They stated that in their opinion the best system of regulating shop hours would be by a general closing order which would require all shops to close at 7 P.M. on four days, 12 on one day, and 8 on one day. From their information the day on which the later closing day was most convenient is Friday; this was especially the case in textile areas where there were a large number of women who were both wage-earners and housewives. They had noted, however, that in a large number of districts the coöperative stores already closed at earlier hours than those without causing any difficulties, and the witnesses thought that there should be a power given to a local authority to make orders for closing at 6 o'clock. Such orders should not be made until full inquiry had taken place, and in making the inquiry the opinion of the shop assistants should be taken The inquiries the witnesses had made in regard to confectioners' shops showed that there was no real demand for the present later hours which prevailed It had been pointed out to them that very often the girls employed were extremely young and suffered physically from the long hours These shop assistants changed very frequently, probably because the work was found too heavy Instances had been given of sickness and general debility among the girls in these shops One case had been given where the girls usually stayed in bed on Sunday because of their exhaustion after the long Saturday hours The witnesses held that a 48-hour week should be established for the workers, in addition to regulating the closing hours

The Committee adjourned until June 15th

HOUSE OF COMMONS.

Wednesday, June 1st

Artificial Light Treatment for Children

Sir Robert Thomas asked the Minister of Health what medical facilities existed in North Wales for the free treatment of children by ultra-violet light, in view of the value of this method of treating rickets, surgical tuberculosis, and other complaints to which children are liable —Major Barnston replied My right hon friend is informed that the Flintshire and Denbighshire County Councils and the Wrexham Town Council have made arrangements for the provision of artificial light treatment for children at the Orthopædic Hospital at Gobowen, and that other county councils in North Wales occasionally send children to this hospital for treatment Provision has been made by the Welsh National Memorial Association at the Wrexham Dispensary for artificial light treatment for children suffering from surgical tuberculosis, and it is also proposed to instal the necessary apparatus for this treatment at the North Wales Sanatorium, Denbigh

Local Authorities and Provision of Playing Fields

Mr Campbell asked the Minister of Health whether, in view of the importance of securing for the nation playing fields throughout Great Britain, he could take any steps to encourage local authorities to use their powers to acquire, lay out, and maintain land for the purposes of games and recreation.—Major Barnston replied My right hon friend can only repeat what has already been said in reply to similar questions He is willing to consider sympathetically applications for sanction to loans for playing fields from local authorities, and a good deal has, in fact, been expended in recent years in the acquisition and laying out of land, though heavy rates and the present need for economy have prevented local authorities in some instances from making full use of their powers My right hon friend has also made a practice of urging local authorities to reserve land for open spaces and playing fields in their town-planning schemes

Pensioner's Refusal to Undergo Operation

Mr Harmsworth asked the Minister of Pensions whether, having regard to the recommendation for operation at Queen Mary's Hospital, Roehampton, recently made in the case of a pensioner, he was still satisfied with the decision of the Ministry in November last year that the degree of disablement arising from the man's pensionable disability had been reduced from 30 per cent to 20 per cent , and whether the present degree of disablement was still at the latter figure —Major Tyron replied I find that this man has refused to undergo the operation recommended and has, therefore, been discharged from hospital as no other treatment is likely to be of benefit to him. In these circumstances I am not in a position to reconsider the assessment of the case.

Standardisation of Vaccines and Serums

Mr Groves asked the Minister of Health whether he had issued any regulations dealing with the standardisation of vaccines and serums , and, if so, whether such regulations had been published for sale —Mr Chamberlain replied Draft regulations under the Therapeutic Substances Act, 1925, were published and placed on sale last April Substantive regulations have now been made after consideration of representations from the trade and other interests concerned and will come into operation on August 6th next, except those relating to labelling, which will not come into operation till Feb 6th, 1928 These regulations will be laid before Parliament and will be available immediately after the Whitsun recess

Thursday, June 2nd.

Purity of Condensed Milk

Major Ainsworth asked the Minister of Health whether any standard test of purity and quality was applied to the importations of condensed milk into this country, especially from Switzerland , and, if so, what it was and how it was carried out —Mr Chamberlain replied Samples of condensed milk are examined by the Government chemist and by public analysts to verify that it complies with the standard of composition laid down in the Public Health (Condensed Milk) Regulations, and is otherwise free from adulteration The tests applied are matters for the discretion of the officers concerned, no standard tests being prescribed I am not aware that any special attention is given to imports from Switzerland

The Powers of the General Medical Council

Mr Macquisten asked the Minister of Health whether, in view of the modern developments in the science and art of healing, he would cause to be appointed a Royal Commission to inquire into the operation of the Medical Acts of 1858, with a view to the alteration of the law, especially with reference to the powers and privileges of the General Medical Council —Mr Chamberlain replied: No, Sir I do not think that modern developments in therapeutics necessitate any revision of the powers and duties of the General Medical Council, and my right hon friend the Lord President of the Council shares my view

Persons Insured under National Health Insurance

Mr Herbert Williams asked the Minister of Health the number of males and females, respectively, who were insured under the National Health Insurance Act in England and Wales at the end of 1926, and the increase since the end of 1925 —Mr Chamberlain replied The approximate number of insured persons in England and Wales at the end of 1926 (inclusive of persons over 70 years of age who have ceased to pay contributions) was males 9,837,000, females 4,658,000, the increases since the end of 1925 being 251,000 and 68,000 respectively

Mr Herbert Williams asked the Secretary of State for Scotland the number of males and females, respectively, insured under the National Health Insurance Act in Scotland at the end of 1926, and the increases, as compared with 1925 —Sir J Gilmour replied At the end of 1926 there were 1,144,000 males and 571,000 females insured in Scotland under the National Health Insurance Act. These figures represent an increase of 28,000 and a decrease of 1000 respectively on the corresponding figures for 1925

Health of the Troops at Shanghai

Lieut -Commander Kenworthy asked the Secretary of State for War what steps were being taken in the interests of the health and comfort of the troops at Shanghai during the coming hot season , and whether he had considered sending the battalions in turn to Wei-hai-wei during the hot weather —Sir L Worthington-Evans replied Everything possible is being done for the comfort of the troops, and the necessary precautions have been taken to guard against outbreaks of those diseases which are liable to occur during the hot weather A convalescent camp is being formed at Wei-hai-wei

Cholera Epidemic in Bombay Presidency

Mr Morgan Jones asked the Under Secretary of State for India whether he would give information as to the extent of the cholera epidemic in Bombay Presidency , and whether the epidemic was still spreading —Earl Winterton replied The latest official figures of attacks and deaths from cholera in the four affected districts in the Bombay Presidency relate to the week ended April 16th, and are as follows —

	Attacks	Deaths
Belgaum District	1182*	575*
Dharwar „	872†	401†
Bijapur „	743‡	256‡
Kanara „	21	20

* Including 541 attacks and 249 deaths, † including 666 attacks and 316 deaths, ‡ including 104 attacks and 56 deaths which occurred previously but were reported during the week According to press reports the totals in the four affected districts in the two following weeks were —

	Attacks	Deaths
Week ended April 23rd	1401	607
„ „ , 30th	1092	461

The latest official information received contains no figures, but indicates that the conditions continue to improve

Women Police Doctors

Mr Day asked the Home Secretary whether there had been any women police doctors appointed in the metropolitan police area —Sir William Joynson-Hicks replied No women have been appointed to these posts

Medical News.

University of Cambridge —At a Congregation held on June 4th the following degrees were conferred —

M D—C H C Dalton, E H H Granger, and L E H Whitby

M B—H V Dicks and H V Coverdale

M B, B Chir—R K Debenham R L Lancaster, R D Milford, J H Randall, and R L Smith

University of London —At recent examinations for the degrees of M B, B S the following candidates were successful —

With Honours—Gilbert Cleary Babington (*a*), Max Barer (*a*, *b*, University Medal), Ernest Arthur Freeman (*d*), George Richard Nicol Henry (*a*), Winifred Annie Ladds (*b*, *c*) Florence Louis (*a*), James Meadowcroft Turner (*d*), Edwin Charles Warner (*b*), Hubert Lyon Campbell Wood (*a*, *c*) (*a*) Distinguished in Medicine (*b*) Distinguished in Pathology (*d*) Distinguished in Surgery (*c*) Distinguished in Midwifery

Ordinary Degree—Charles Everett Heyworth Anson, Cécile Helen Denise Asher, Arthur Leslie Banks, John Templeton Barr, Raymond Edward Barrett, Douglas Elliott Barton, Arthur David Belilios, Joan Helen Blackledge, Douglas Arthur Blount Eleanor Dorothea Blunt, Hilda Maud Price Bond, Derek Gordon Bown, Denis Anderton Brigg, Muriel Brighton, Margaret Hughes Brown, Helen Marion Browne, Helen Rosa Betty Buck Thomas Saville Cochrane Alexander Cohen, Mary Cecilia Emsley Constantine, Edgar Stuart Curtiss, Frederick James Darbyshire, Gwilym Ivor Davies, Tom Emrys Davies, John Dean, Arthur Edgar de Chazal, Jean Marguerite Dollar, Margaret Relach Dunlop, Malcolm Herbert Cecil Dyson, John Evans, Frederick Mortimer Maurice Eyton Jones Dora Janet Fox, Alfred Edward Fraser Smith, Joel Gabe, Bernard Mario Cole Gilsenan, Arkyl Staveley Gough, William Pickup Greenwood, Charles Herbert Hampshire, Kathleen Hoyes, Henry Frederick Hiscocks, Janet Ireland Hoare Joan Houseman Eric Graham Howe, Aust Hilton Jackson, Margaret Evelyn Ledger, William Leslie Albert Henry Levers, Marian Lones, Joan Lydia Lush, Joyce McConnell, Alexander Cameron MacLeod, Gurdit Singh Malik Charles Wallace Marshall Isaac Maonde, John Wright Nankivell, Helen Edith Maud Newman, Joan Nixon, Marjorie Ethel Parfitt, Stephen Mary Power, Marion Ravell, John Herbert Owen Roberts, Llywelyn Roberts, Wemyss Cameron Robinson, Enid Helen Rockstro, Sidney Thomas Seccombe, Moses Sendak, Joseph Silverstone, Kenneth Shirley Smith, George Ernest Frederick Sutton, Frederick William la Bois Kathleen Edith Tresilian Maeve Whelen, Elizabeth May Whishaw John Stanley Whitton, Harry Keith Williams, Bernard Hugh Hahnemann Wooderson, Eric Wornum

The following candidates were successful in the undermentioned parts of the examination :—

Group I—Marjorie Flowers Brierley, Douglas Arthur Dewhirst, Phyllis Mary Edgar, Libero Fatti, Abraham Golombek Charles Bertram Huss Caroline Mary Kingsmill, Frank Edward Kingston, Richard Alban Vaughan Lewys Lloyd Isabella Louise Hamilton Livingstone, William Edward Lock Helen Elizabeth Mayfield Bertha Inez Meyer Ethel Elizabeth Mary Ogilvie, Evelyn Doris Owen, George Edward Basham Payne, Margaret Eveline Peaker Kudatelagé Richard Theobald Peiris Edwin Seymour Phillips, Robert Lionel Quilliam, Eric Walter Skipper, John Robert Colquhoun Spicer, Victoria Winifred Symonds, Olive Mary Thomas, Frank Sheerman Thornton, Winifred Mary Turner Joan Beatrice Walker Richard Fowler Ward, Ronald Morgan Williams, Harry David Wyse

Group II—George Thomas Allerton, Chandumal Asanand Amesur, Vernon FitzClarence Anderson, Charles Glynne Bowen, Frank William Bradley Philip John Lauriston Capon, John Adye Cholmeley, Doris Beatrice Clay, Roy Reiach Fells Percy Hebden Flockton, James Rocheid Forrest Krishnalal Tribhovandas Gajjar, Dorothy Godden, Colin Hugh Harper Theodore Henry Hobbes, Kenneth Harry Lachlan, Malcolm Langley Maloy, William Drew Nicol Nathoobhai Dayalji Patel, Gangadhar Martand Phadke Brian Fitzgerald Russell, Charles Francis Joy Smith William Robert Colquhoun Spicer, Kathleen Mary Stuart Harris, Olive Fredrica Sydenham, Edward Cowper Tamplin Fauset Welsh John George Weston, Charles Louis Worthington, Elsie Bodley Wright

University of Edinburgh —On July 20th, during the British Medical Association's visit to Edinburgh, the degree of Doctor of Laws will be conferred on Lord Dawson of Penn, Prof Archibald Donald (Manchester), Dr C E Douglas (Cupar), Sir William Hale-White (London), Mr R G Hogarth (President of the Association), Dr William Hunter (London), Prof T H Milroy (Belfast), Sir Berkeley Moynihan, P R C S Eng, Sir John Parsons (London), Sir Humphry Rolleston (Cambridge), Dr G F Still (London), Mr Wilfred Trotter (London), Sir Almroth Wright (London), Prof. Vittorio Ascoli (Rome), Prof Jules Bordet (Brussels), Prof Harvey Cushing (Harvard), Prof C L Dana (Cornell), Prof Knud Faber (Copenhagen), Prof J van der Hoeve (Leyden), Prof Otto Meyerhof (Berlin), Prof Otto Naegeli (Zürich), Prof W S Thayer (Johns Hopkins), and Dr Theodore Tuffier (Paris)

Royal College of Physicians of Edinburgh —The Dr Alexander Black lecture for 1927 will be delivered by Dr C E Douglas in the hall of the College on Wednesday, *June 15th, at 5 P M* *The subject will be the Family Doctor* as Specialist

Biochemical Society —The next meeting of this society will be held in the Biochemical Department, The Museum, Oxford, to-day, Saturday, June 11th, at 3 P M

Institution of Heating and Ventilating Engineers —The summer meetings of this Institution will be held at Bournemouth from June 20th to 22nd Particulars may be had from the secretary, 12, Russell sq, London, W C 1.

Australian and New Zealand Medical Association in England —The summer dinner of this Association will be held on June 17th at the Piccadilly Hotel Sir John Bland-Sutton will be the official guest Mr Joseph Cunning will be in the chair Medical visitors are invited

National Conference on Maternity and Child Welfare —This conference is to be held in the House of the British Medical Association, Tavistock square, London, W C 1, from July 5th to 8th, under the presidency of Mr Neville Chamberlain, Minister of Health The programme may be obtained from the hon secretary, at 117, Piccadilly, London, W 1

Joint Tuberculosis Council —Sir Henry Gauvain has arranged to hold a post-graduate course on Non pulmonary Tuberculosis at Lord Mayor Treloar Cripples' Hospital and College, Alton Hants, from Monday, June 27th, to Saturday, July 2nd The class is limited to ten members and there will be no fee Particulars may be had from the hon secretary, Post-Graduate Courses, The Larches, Farnham Royal, Bucks

Indian Medical Service Dinner —The annual dinner of the Indian Medical Service will be held at the Trocadero Restaurant on Wednesday, June 15th, at 7 15 for 7 30 P M Major-General R W S Lyons will take the chair Tickets and all particulars may be obtained from the joint hon sec, Col J J Pratt, I M S (ret), 18, Nevern Mansions, Warwick-road, London, S W 5

Nursing Awards —The decoration of the Royal Red Cross, Second Class, has been conferred upon Miss Emily de la Hoyde, matron, and Miss Catherine Annie Waugh, nursing sister, both of the Indian Temporary Nursing Service, in recognition of the special devotion and competency displayed by them in their nursing duties with the British Forces in Iraq

The late Dr E L Cambie —The death is announced of Dr Edward Loftus Cambie, on May 28th, at his residence at Templemore, Co Tipperary Educated at the Royal College of Surgeons and at the University of Dublin, Dr Cambie took the qualifying diploma of the Irish Colleges in 1892 At first he practised in *London*, but afterwards settled at Portsmouth, where he worked for 21 years Not long ago he returned to Ireland Dr Cambie leaves a widow and one son

Prizes at London Medical Schools —On Tuesday, June 21st, in the Governors' Hall, the Duke of Connaught will distribute the prizes won at St. Thomas's Hospital Medical School On his *arrival at 3 P M he will* unveil a tablet on which are inscribed the names of those of St. Thomas's Hospital who fell in the late war

The President of the Board of Education, Lord Eustace Percy, on Wednesday, June 29th, at 3 P M, will distribute the prizes at the London Hospital Medical College and Dental School in the College Library

Compulsory Removal —*Proceedings* were taken at Birmingham last week against a young woman who had been certified at the Birmingham Dispensary as suffering from tuberculosis in an infectious stage and who had failed either to take proper precautions against spreading the disease or to accept hospital treatment She shared a bed with a female lodger and had refused to make other arrangements in spite of an offer by the Health Department to lend her a single bed Adjourning the case, the stipendiary magistrate said if she did not comply with the requirement to occupy another bed he would order her removal to a sanatorium

The late Dr H T Wright —After some 12 years of practice at Foleshill, Dr Herbert Trouncer Wright has died at Northampton at the age of 58 He was a Scotsman and qualified with the Scottish triple diploma in 1897 For some years he acted as medical officer of health and public vaccinator for the No 2 district of Alston in Cumberland, then he went to Derby and finally he settled in Foleshill, first as assistant to Dr John Orton, and afterwards in practice by himself Dr Wright was twice married and leaves two children

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole street W

THURSDAY, June 16th —5 P M, DERMATOLOGY (Cases at 4 P M) Dr Parkes Weber Early Angioma Serpiginosum with Another Early Case (previously shown) for Comparison Dr G B Dowling (1) Rare Seborrhoide of the Face (Pringle), (2) Acne Agminata Other cases will be shown

FRIDAY —8 P M OBSTETRICS AND GYNÆCOLOGY Specimen Mr W Gilbatt X Ray Demonstration of a Case of Nägele's Pelvis Short communications Mr J B Banister Some Results of Myomectomy Undertaken in the Hope of Curing Sterility Mr A C Palmer Some Notes on Five Cases of Tuberculosis of the Female Genital Tract, with special Reference to the Endometrium Paper Dr R A Gibbons The Cause of the Onset of Labour

MEDICAL SOCIETY OF LONDON, 11, Chandos street, Cavendish square, W

MONDAY, June 13th —8 P M, Annual General Meeting 9 P M, Annual Oration by Prof Harvey Cushing on the Surgical Aspects of Acromegaly, followed by a Conversazione

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos street, Cavendish square, W

THURSDAY, June 16th —8 15 P M (preceded by a demonstration at 7 45), Annual General Meeting followed by the Induction of New President, Prof J W W Stephens, of Liverpool Presentation of Chalmers Medal awarded to H Lyndhurst Duke, of Uganda A paper will be read by Dr L Fabian Hirst, of Ceylon, on Rat Flea Surveys and their Use as a Guide to Plague Preventive Measures

LECTURES, ADDRESSES, DEMONSTRATIONS, &c

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S W

TUESDAY, June 14th —5 P M, Sir F Gowland Hopkins The Task of Biochemistry (Second Croonian Lecture)

THURSDAY —5 P M (Third Croonian Lecture)

LONDON SCHOOL OF DERMATOLOGY, St John's Hospital, 49, Leicester square, W C

TUESDAY, June 14th —5 P M, Dr H W Barber Alopecia Areata and Vitiligo

THURSDAY —5 P M, Dr K N G Bailey Pathology Demonstration

NORTH-EAST LONDON POST GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham N

MONDAY, June 13th —2 30 P M to 5 P M, Medical, Surgical, and Gynæcological Clinics Operations

TUESDAY —2 30 P M to 5 P M, Medical, Surgical, Throat, Nose, and Ear Clinics Operations

WEDNESDAY —2 30 P M to 5 P M, Medical, Skin, and Eye Clinics Operations

THURSDAY —11 30 A M, Dental Clinic 2 30 P M to 5 P M, Medical, Surgical, and Ear, Nose and Throat Clinics Operations

FRIDAY —10 30 A M, Throat, Nose, and Ear Clinics 2 30 P M to 5 P M, Surgical, Medical and Children's Diseases Clinics Operations 4 30 P M, Special Demonstration on selected cases of Nerve Diseases

HOSPITAL FOR SICK CHILDREN, Great Ormond street, W C

THURSDAY June 16th —4 P M, Mr Eric Lloyd Acute Mastoiditis

ROYAL NORTHERN HOSPITAL, Holloway-road, N

MONDAY, June 13th —2 30 P M, Mr F D Saner Clinical Round on Surgical Cases

TUESDAY —3 15 P M, Mr T Twistington Higgins Mammary Tumours

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS

TUESDAY, June 14th —3 30 P M (at the Jessop Hospital), Mr Chisholm Some Gynæcological Cases

FRIDAY —3 30 P M (at the Royal Infirmary), Prof Connell Clinical Cases

Appointments.

DEACON, J N, M B, B S Lond, has been appointed Resident Medical Superintendent of the Hendon Union

LLOYD WILLIAMS, I H, M B, B S Lond, Certifying Surgeon under the Factory and Workshop Acts for the Burgess Hill District, Sussex

RANKIN, ROBERTA THERESA, M B Ch B Edin, Assistant Medical Officer of Health to the Lancaster Corporation

SHANKS HELENA, M B, Ch B Glasg, Resident Medical Officer at Falkirk Burgh Infectious Diseases Hospital

Manchester Royal Infirmary WRIGLEY, F G, M D Manch, Honorary Assistant Aural Surgeon, SEWELL, D L, M B, B S, Lond, Aurist and Laryngologist

Vacancies.

For further information refer to the advertisement columns

Bath, Royal United Hospital —H S £120

Bethnal Green Hospital, London, E —Asst M O £400

Birkenhead County Borough —Asst M O £450

Brighton, Royal Alexandra Hospital for Sick Children —Sen and Jun H S 's £120 and £100 respectively

Brighton, Royal Sussex County Hospital —H S and H P Each £150

Bristol General Hospital —Hon Asst S to Ear, Nose and Throat Dept

Cambridge, Addenbrooke's Hospital —Cas O At rate of £130

Cancer Hospital, Fulham road, S W —H S At rate of £100

Cardiff, Welsh National School of Medicine —Asst in Medical Unit

Charing Cross Hospital, Strand, W C —Registrar £100 Also Hon Anæsthetist

Durham County Hospital —Jun H S At rate of £120

East London Hospital for Children, &c, Shadwell, E —Res M O £200

Elizabeth Garrett Anderson Hospital, Euston road, N W —Obstetrician

Gloucester County Mental Hospital —Jun Asst M O £350

Hellingly, Sussex, East Sussex County Mental Hospital —Jun Asst M O £350

Hospital for Consumption and Diseases of Chest, Brompton, S E —Med Reg £300

Ipswich, East Suffolk and Ipswich Hospital —H S and Cas O £100

Manchester, Ancoats Hospital —Res M O At rate of £150

Manchester, Crossley Maternity Hospital, Ancoats —Res M O At rate of £50

Manchester, Hulme Dispensary —Res M O £300

Manchester Royal Infirmary —Asst M O £35

Middlesex Hospital Medical School, Bland Sutton Institute of Pathology —Asst for Cancer Research £350

Miller General Hospital, Greenwich road, S E —Cas O and H S £150 and £125 respectviely

Nottingham Children's Hospital —Res H S At rate of £150

Oldham Royal Infirmary —Three H S 's Each at rate of £175

Penshurst, Kent, Cassel Hospital for Functional Nervous Disorders —Res M O £350

Poplar Metropolitan Borough —Consulting Phys 1½ guineas per attendance

Royal Army Medical Corps —Commissions

Royal Chest Hospital, City road E C —P to Out-patients

Royal Naval Dental Service —Dental Officers

Royal Northern Hospital, Holloway, N —H S At rate of £70

Royal Waterloo Hospital for Children and Women, Waterloo road, S E —H P At rate of £100 Also Asst Radiologist £50

St Helens County Borough —Deputy M O H £700

St John's Hosp, Lewisham, S E —Res Cas O At rate of £100

St Mary's Hospital, W —Asst Pathological Chemist £300

St Peter's Hospital for Stone, &c, Henrietta street, Covent Garden, W C —Clin Assts

Seamen's Hospital Society, Dreadnought Hospital, Greenwich —Anæsthetist 50 gs Also H P and H S At rate of £110

Southampton, County Borough —Asst M O H £600

Southampton, Royal South Hants and Southampton Hospital —Jun H S At rate of £150

South London Hospital for Women, Clapham Common, S W —Asst P

Sudan Government Medical Dept —M O £E 720

Sudan Government, Wellcome Tropical Research Laboratories, Khartoum —Asst Bacteriologist £E 720

Swansea General and Eye Hospital —Sec Supt £500

Tunbridge Wells and Counties General Hospital—H S £160

University College Hospital, Gower street, W C —Surg Reg £250

University of London —University Chair of Pathology £1000 External Examinerships

West End Hospital for Nervous Diseases, Gloucester Gate, Regent's Park, N W —Sen H P Also Jun H P At rate of £150 and £100 respectively

West London Hospital, Hammersmith road, W—H.P and H S Each at rate of £100

Wrexham and East Denbighshire War Memorial Hospital —Two H S 's Each at rate of £100

Births, Marriages, and Deaths.

BIRTHS.

NIXON —On May 27th, at Lansdown place, Clifton, Bristol, the wife of Dr J A Nixon, of a daughter

WOODHOUSE —On May 29th, at Firstone The Highway, Sutton, Surrey, the wife of Sydney C Woodhouse, M B, M R C S, of a son

DEATHS.

COOK —On May 30th at Chesneye Lee on-Solent, Surgeon-General Henry Cook M D I M S (retd), F R C P, F R G S, F R M S, F G S J P, in his 96th year

FULLER —On May 27th, at Milnthorpe, Westmorland of heart failure, William Anderson Fuller, M R C S, L R C P

McMILLAN —On May 31st suddenly, at Lyncroft, Sandown I W, John Furse McMillan, Captain R.A M C (retd), M R C S, L R C P, L S A, aged 67

SMALLPEICE —On June 2nd at a nursing home, Donald Smallpeice, L R C P, M R C S, of St Martha's Lodge, Guildford, aged 74

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

Notes, Comments, and Abstracts.

ON ESTIMATING THE VALUE OF REMEDIES IN PULMONARY TUBERCULOSIS

By F R Walters, M D , M R C P Lond ,
PRESIDENT OF THE SOCIETY OF SUPERINTENDENTS OF TUBERCULOSIS INSTITUTIONS

The following remarks are intended to help those who are trying to assess the value of remedies in pulmonary tuberculosis, including so-called " consumption cures " Laymen commonly regard this as a simple matter , but those better acquainted with the disease know well the difficulties and complexity of the problem In testing a remedy we must have fairly definite groups of cases, and use the proposed remedy in a definite and fairly uniform way To arrive at reliable conclusions we need a similar group of cases as a standard of comparison So long as we are dealing with symptomatic remedies this is comparatively easy to arrange, but in seeking a more comprehensive remedy it is far otherwise Hence the long list of such drugs and preparations, beginning with creosote and hypophosphites, ending with the Spahlinger remedies and sanocrysin Some of these have been discredited after a period of great popularity , concerning others medical opinion is much divided , while yet others are still on trial

Analysis of Cases

Our cases should be analysed in a way corresponding with all the more important factors in prognosis , what we have to do is to find out how far the remedy will affect the prognosis

Stage, grade, and complications —One of the earliest methods of appraising the value of treatment in this disease which has stood the test of time was based on the nature and extent of the local lesions (stage), to which was added by others the degree of constitutional disturbance (grade), and the presence or absence of serious complications All the more useful classifications are based upon these principles A classification which is comparable with the chief ones employed in America and the continent, and which comprises and defines these factors, was devised by the Society of Superintendents of Tuberculosis Institutions[1] and adopted by some other kindred societies This classification (or one like it) is essential for our purpose

Type of local disease —Another important point is to decide whether the lesions present are mainly fibroid, mainly exudative (caseation, &c), or mixed The decision is not always easy, but is worth attempting Where there is doubt the case should be classed as mixed in type The distribution of the lesions is also important Well-localised foci are more favourable than scattered tubercle

Activity of the disease —Active disease may be inferred where there are progressive lesions in the chest, or constitutional disturbance, especially febrility or raised pulse-rate Slight febrility is important in this connexion and cannot be detected by the usual methods of thermometry[2] Menstrual fluctuations of temperature in women add considerably to the difficulty of the problem Temperatures are affected by rest and exercise, so that Inman's classification into (1) resting febrile, (2) resting afebrile, ambulant febrile, (3) ambulant afebrile, is useful in gauging progress Tubercle bacilli in the sputum are not an infallible sign of activity They may be present for years without constitutional disturbance or evidence of spread in the lesions

Rate of progress of the disease —Since cases differ greatly in the time occupied in arriving at a similar stage, it is useful to divide them into slow, medium, and rapid This can be done if we can fix the date of appearance of the earliest symptoms attributable to tuberculosis of the lungs Some symptoms—such as hæmoptysis—arise also from other quite unconnected causes I think the best rule would be to regard the symptoms as due to tubercle if there is no other probable cause discoverable, and if there is unmistakable evidence of tuberculosis later on Quite commonly we find evidence of a series of breakdowns of tuberculous nature separated by healthy intervals There may also be a history of tuberculous signs or symptoms in some other part of the body If so, this should be noted, with the date

Mode of onset —We should distinguish the mode of onset—whether insidious, or following immediately after pleurisy, pneumonia or a chest injury, or an acute illness of another kind The illness which caused the breakdown in health may modify the course of the disease

Mixed infection —The presence of other pathogenic organisms in the sputum should also be noted, periodical analyses being made Some remedies which are useful in pulmonary tuberculosis (such as creosote) probably act mainly (or entirely) on associated infections

Natural resistance —Pulmonary tubercle is the resultant of three groups of factors the original infection, the natural resistance, and the conditions of life generally Amongst the latter we can eliminate the cases due to *faulty hygiene* by noting the progress made during an observation month under better conditions The chief point concerning the original infection is to decide whether *massive infection* was likely This may be inferred where there has been close association with a patient suffering from advanced disease and known to have neglected the usual precautions as regards sputum Where both of these causes (faulty hygiene and massive infection) seem to have been absent, and yet the disease has made rapid progress, we may infer feeble resistance Most of our present population have a high resistance to tubercle, since most are infected, but only a minority fall ill with the disease , but after acute illnesses, childbirth, and serious accidents, resistance to tubercle is probably temporarily reduced

The effect of *repeated infections* is still sub judice In my opinion small doses may actually protect, while repeated *large doses of infection at short intervals will almost certainly* reduce the resistance It is not, I think, safe to assume that resistance is low because of a *family history* of tuberculosis alone, as other factors are concerned besides inheritance It is a mistake to regard the disease as mainly due to infection Lack of resistance, temporary or permanent, together with the conditions of life, have much more to do with it In proportion as a community becomes immunised against tubercle, so does the relative importance of causes other than infection increase

Age and sex —The resistance to tubercle is notably dependent upon age and sex In early childhood resistance has not yet been established Later on comes a more favourable period , but with the advent of puberty in girls, and possibly also in boys, the constitution is decidedly less resistant to the disease In women menstruation and childbirth are times of danger, which may help to light up an attack

Conditions of Life

Three sets of factors have to be remembered under this heading *climate and situation*, the *house and quarters*, *personal hygiene and habits* Under the first heading would be included the usual climatic factors which affect health, and the position of the home or institution—whether rural or urban, high up or low lying, dry or damp, sheltered or windswept Under the second heading would fall ventilation, cleanliness, dryness, and state of repair so far as affecting health The third heading would comprise all relevant matters of personal hygiene, food-supply, personal habits, occupation, rest and exercise, and observance or otherwise of sanatorium rules, especially the regulation of the day's happenings according to an accurate temperature record If is not safe to draw conclusions about a general remedy in tuberculosis without taking account of such factors Irregular meals, or shut bedroom windows, or an injudicious excursion will often have more noticeable effect on the health of such a patient than most drugs, even such as are of undoubted value

The Remedy

Mode of employment —Having ensured uniformity in the trial group and control, and in the conditions of life generally, we must be equally definite in the manner of using the remedy The difference of opinion concerning the value of tuberculin is a good example of the confusion which arises through neglect of this precaution Apart from the numerous varieties of tuberculin, there are many ways of administration, differing in dosage, intervals, criteria for choice of these, and conditions under which the remedy is given The most important difference is between the methods of cumulative and non-cumulative dosage In the former method doses are increased as rapidly as constitutional disturbance will permit, another dose being given before the effects of the previous one have worn off, with the result that the sensitiveness of the body to the remedy is eventually abolished In the other method the doses are increased much more slowly, at longer intervals, and a second dose is not given until the effect of the first has subsided, the sensitiveness of the body towards the remedy being maintained or even increased Both of these methods cannot be correct , yet they have not usually been distinguished in the published reports

Adequate time of treatment —Adequate periods of treatment are necessary, both in the controls and in the test cases Under Alpine climatic treatment many cases are recommended to spend two winters and a summer in the Alps , and it would be illogical to condemn the treatment because such a patient did not recover in two months Under ordinary hygienic treatment, lasting results cannot be expected in less than three months in early (first stage) afebrile cases, yet sanatorium treatment is often condemned because patients with well-marked fever or with second or third stage lesions do not get well in three months, such cases need far more prolonged treatment, or the equivalent at home, to secure lasting benefit In every case, whatever the remedy adopted, it should be continued until there is a reasonable probability of the maximum benefit having been attained

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[1] See Tubercle, November 1921, p 90 , F R Walters Domiciliary Treatment of Pulmonary Tuberculosis, second edition, p 277

[2] See S Vere Pearson the Temperature as a Guide to the Treatment and Prognosis of Phthisis, The Lancet, Sept 8th, 1909 , F R Walters Loc cit , p 10, et seq

How the remedy acts—To obtain evidence of permanent value we must know not only that the remedy is useful, but how it acts and under what circumstances The same remedy is not necessarily the best for every stage of the disease, since the hindrances to recovery will not be the same throughout, and the damage done by prolonged illness complicates the matter in the later stages In an early stage the defence is mainly by a modification of the inflammatory process—the formation of granulomata Later on the natural production of antitoxins comes into prominence, and the removal of caseous and other damaged tissues Consequently remedies which increase the amount of circulating toxin—even temporarily—must be used with the greatest caution in patients with extensive lesions or toxæmia

Pulmonary tuberculosis has far-reaching effects on many parts of the body, in well-marked cases there is a steady drain on the immunising machinery, on the organs of nutrition, digestion, and circulation which support it, and on the excretory organs which deal with the products of metabolism in the affected tissues Attack and defence are often very nearly balanced, so that a little extra help may turn the scale For instance, a remedy which restored the appetite and so improved nutrition, or one which ensured refreshing sleep when there was harassing cough, might do immense good, and this is the justification of symptomatic treatment Yet such remedies could not be regarded as "cures" for consumption

No reliable *bactericidal* drug has so far been discovered Many antiseptics kill the bacillus in cultures, but do not reach it in lethal doses in the body without damaging the latter Salts of gold and copper appear to be the most promising Some remedies are known which hinder the growth of the bacillus According to Gräfin von Linden, methylene-blue has such an action in experimented animals Destruction of the bacillus in all but the earliest stages involves katabolism of caseous and other damaged tissues and liberation of toxins

Many remedies are known which *stimulate the immunising organs*, and so act indirectly on tuberculous tissues These remedies fall naturally into two groups, specific and non-specific, of which the former act in very minute doses Prominent examples of the former group are tuberculin and its allies, of the latter group, sanocrysin and other gold salts, copper salts, and cantharidin Probably every member of these two groups causes hyperæmia of the affected tissues Possibly large doses are destructive, while smaller ones promote fibrosis Creosote, guaiacol, and camphor are also stated to promote fibrosis of the tuberculous foci Remedies given to promote leucocytosis and chemotaxis have proved to be disappointing Various balsams were tried for this purpose Cinnamic acid (introduced by Landerer) damages the blood after three days Camphor is stated to have a chemotactic action

Active immunisation with *living bacilli*, in imitation of vaccination against small-pox, has been attempted by Friedmann, Möller, Calmette, and others, but is probably not free from danger

Passive immunisation (as in diphtheria) has been aimed at by a number of investigators, but does not appear to have been satisfactory There is probably some antagonism between active and passive immunisation, as the presence of some circulating toxin appears to be necessary to cause a formation of antitoxins

Biochemical immunisation is quite conceivable, but has not yet been effected, as we know too little about the biochemical difference between those who suffer from infection and those who do not Hygienic remedies, such as an open-air life, occupations promoting the flushing of every part of the lung with pure air, and plenty of suitable food, are still the most efficacious remedies known for protecting the body against tuberculosis Whether vitamins play a part in the defence has not yet been determined We are still doubtful as to the precise mode of action of even so well-established a remedy as cod-liver oil The French method of remineralisation appears to rest upon an insecure foundation Lime salts do not promote healing in tuberculous foci, they merely infiltrate them as they do all unirritating worn out tissues

Surgical methods such as artificial pneumothorax ensure local rest and reduce the absorption of toxins They are, therefore, invaluable in certain cases, but are unfortunately only applicable to a small percentage, and even then can only deal with some of the lesions

Suiting the Remedy to the Case

No universal remedy has so far been proved to be reliable The specific and other general remedies which are useful in afebrile cases do not appear to be suitable for the toxæmic, for which hygienic remedies—rest, fresh air, &c—are still the most widely applicable An antitoxin that would cause passive immunisation without interfering with the processes of active immunisation would be a great boon in toxæmic cases Patients who suffer from pulmonary tuberculosis do not all lose ground for the same reasons In one it may be the digestion, in another the circulation that fails, so that in all but early stage cases more than one remedy would appear to be necessary

The Results of Treatment

To prove the value of a remedy in pulmonary tuberculosis it is not enough to show that improvement—or even recovery—has resulted under its use, for this is true of every one of the numerous remedies ever recommended, some of which are now discredited Since many factors influence the result besides the special remedy, and there is a natural tendency to recovery in most of our present population, this is quite intelligible, though often lost sight of

Present methods of treatment are capable of restoring to health in most of the early cases, and many of the more advanced, but they have the drawbacks that the treatment is insufficient in some cases, is necessarily prolonged, is sometimes highly inconvenient, and will usually only lead to a recovery which is dependent upon the after-conditions of life If, then, a new remedy can be shown to make the necessary treatment shorter, more widely reliable, more convenient, or more lasting and unconditional, it is well worth adopting This claim has been made on behalf of several remedies not universally accepted—notably for tuberculin—but owing to the imperfections of the tests applied has not been substantiated

Immediate or remote results—Unless the after-conditions are known and taken into account, the remote results are not a safe measure of the efficacy of treatment Survival is a measure, not merely of the value of treatment, but also (and much more) of the suitability of the after-conditions and of the permanent damage done to lungs and other organs Even after complete arrest of the tuberculosis, the life is below standard, and liable to be cut short by circumstances not directly connected with the original illness or its treatment

Estimation of Progress

There are two possible ways of recording progress either to record the progress made in a given time, or to record the time necessary to arrive at a given degree of improvement Each method has its convenience according to circumstances, but the latter is more precise when treatment is not arbitrarily limited, but is continued until the maximum benefit has been obtained

Progress in a given time—In this method the improvement effected in various respects will have to be summarised by some suitable classification One of the simplest is into (1) well, (2) better, (3) stationary, (4) worse, (5) dead It is, however, arbitrary, and does not distinguish (as it should) between local and general improvement A more complete classification, in which the terms are defined, was devised by the American National Association for the Prevention of Tuberculosis, with modifications by Lawrason Brown[3] This classifies the results into (1) apparently cured, (2) arrested, (3) improved, (4) unimproved or progressive, (5) dead This is quite convenient where the time of treatment is prolonged, but in many sanatoriums in this country the time of treatment is limited for most cases to two or three months, so that the results could only be classed under the last three headings

Measurement of time required is often possible when the foregoing method would be fallacious or inapplicable We may choose some definite sign of improvement, such as the disappearance of râles (if there is no mixed infection), of fever (resting or ambulant), of sputum, or tubercle bacilli in the latter More useful research could be done in this way, by noting the average time required with and without the special remedy in similar groups of patients than in searching for "remedies for consumption" when the time and conditions were inadequate for a fuller test

Space does not permit me to discuss the various signs and symptoms of improvement Some of these—such as gain in weight—are only applicable for limited periods Others—such as disappearance of sputum or of râles—are equivocal, and must be taken together with other circumstances in deciding whether they are signs of improvement or not When progress is slow, and the evidence obscure, other criteria should always be adopted as well as the usual clinical ones—notably the blood tests and the graduated Pirquet[4] Among the more useful blood tests may be mentioned the Arneth test, differential leucocyte counts (leucocytosis with increase of lymphocytes and of eosinophils is favourable), the sedimentation test, and some of the chemical tests One caution is necessary respecting physical signs These should be similarly estimated before and after treatment and in the controls, X ray findings are not comparable with those by ordinary clinical methods If both are not available, the latter is preferable in expert hands Care should also be taken to distinguish between consolidated and fibrosed areas I have known elaborate treatment employed in a case where there was no evidence of any active tuberculosis, only the results of past disease

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[3] Jour Amer Med Assoc, Jan 30th, 1909

Conclusions

Recovery in pulmonary tuberculosis depends on so many variable factors that extreme care is necessary in estimating the value of a remedy in this disease, especially one which acts upon several parts of the body, or is reputed to have a general curative effect We must take into account the clinical state of the patient, points in the history enabling us to estimate his resisting power and the fierceness of the attack, the general conditions of life, including dominant hygienic factors, observance of ordinary "sanatorium" rules, and factors of climate, site, and quarters The remedy must be applied to a fairly definite group of patients in a definite and fairly uniform manner, and should be continued until there is reasonable probability of having attained the maximum benefit Controls should be chosen, of a similar nature, under similar conditions, excepting always the factor to be tested

Remote results are not reliable, because they depend not only on the original course of treatment, but also largely on the conditions of life and the amount of permanent damage to lungs and other organs before, during, and after treatment To estimate the immediate results we need a careful classification in which the terms are defined Where prolonged treatment is not available, valuable information may be obtained by estimating the average length of time necessary to attain some definite result, such as disappearance of fever or of râles Just as in pharmacological investigations the action of the remedy on each physiological system is noted, so should it be with the remedies of tuberculosis More useful conclusions are likely to be arrived at by studying the effect of any reputed "cure" on the individual factors of the disease than by merely recording "improvement" or "recovery," a conclusion which teems with fallacies

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VENEREAL DISEASE IN BRITISH COLONIES

THE British Social Hygiene Council brought a number of recommendations before the recent Colonial Office conference To stamp out venereal disease, they said, the primary need is for medical men and women, specially qualified, to be placed in charge of antivenereal work with adequate facilities In appointing medical officers in the future the Colonial Office should demand of candidates an efficient knowledge of the diagnosis and treatment of venereal diseases, and study leave should be given to medical officers already employed to enable them to secure the necessary knowledge Where the appointment of a specialist was impracticable for some single small unit of the Empire, it might prove effective to appoint a specialist who could hold post-graduate courses in a number of centres who could devise and supervise special treatment facilities in each centre, who could act as adviser to the chief medical officers on the spot, and could promote a campaign for public enlightenment. Outlying parts of the Empire, it was pointed out, are paying 50 per cent more for neosalvarsan preparations than the institutions giving free treatment under the Ministry of Health in this country, combined action should be taken by the Colonies in the purchase of drugs The question of education was discussed, and it was proposed that as emergency measures, pending the adequate training of teachers, arrangements should be made between the Colonial Office and groups of colonies for visits to be paid by a biologist and a psychologist to the different units and for scholarships to be offered to enable selected teachers to take a full year diploma course which, it is hoped will shortly be available at the Universities of London, Wales (Aberystwyth), and Liverpool

Serious harm, according to representatives of the Council, is being caused to some foreign races by the circulation of suggestive films among peoples to whom Western customs and traditions are unknown The Council does not consider it sufficient that only those films to which the term "obscene" could be applied should be banned, but would wish the ban also to be applied to other European films that can be classed as "unsuitable"

A NEW DESIGN OF ULTRA-VIOLET LAMP

THE "Trinity" ultra-violet lamp designed and produced by the Medical Supply Association, enables the user to employ the radiation either from a mercury vapour burner or two carbons plain or cored, two tungsten rods or tungsten and carbon The mercury arc and any of the open arc combinations can be used simultaneously, though not on the one patient. The apparatus consists of a floor standard of the usual type, with circular resistance unit round the foot of the central column, and carrying a counter-weighted arm provided at each end with one of the familiar spherical aluminium hoods The arm has a good vertical travel and moves on ball bearings providing for horizontal movement Locking arrangements are also provided One hood contains a vacuum type mercury vapour burner consuming approximately three ampères The arc is struck by tilting the metal hood which is so weighted as to return to the normal running position This arrangement keeps the interior of the hood free from mechanism and facilitates the provision of a concave reflector, the angle of which can be adjusted to suit the position of the patient This reflector is made of a special metal claimed to have an unusually high reflective power

For local treatment, the whole lamp can be enclosed except for an aperture of the desired size, and ample ventilation appears to have been provided The other hood is used to house the open arc, which consists of two adjustable electrode holders, each having an adapter to take either tungsten rods or carbons of about 13 mm diameter The handles are well insulated and striking is performed by pushing in one of the electrodes till the points touch; on releasing the pressure, the points separate a definite distance by the action of a return spring and the arc can then be adjusted For local treatment, the front is rotated bringing into position a concentrating quartz lens The consumption of this unit is approximately 5 ampères Each unit is provided with its own resistance and switch

The apparatus is primarily designed for use on direct current mains, but when alternative current only is available, an electrolytic rectifier can be provided The design is ingenious and practical.

THE HYGIENE OF THE CHILD OF TEN

IT would be useful as well as interesting to have a complete series of monographs on the various epochs in the life of man, woman, or child, considered from the standpoint of physiology, psychology, and hygiene There are some excellent books somewhat of this kind such as Stanley Hall's "Adolescence" or Miss Drummond's "Round About Four Years, Old," but these authors were not medical and certain important aspects of their subject are passed over Of works by medical writers there are a fair number dealing with infants, but for later ages there are few

We have received a reprint of a thesis which Dr Theodore C Merrill, of Boston, U S A, recently presented at the University of Paris, dealing with the Hygiene of the Child of Ten He remarks on the importance of this age—or rather of the period from 7 to 13 years, it is, he says, "à la veille de la puberté," and the latest period of childhood during which it is still possible to correct defects Nevertheless, it has been neglected by hygienists Dr Merrill has been unfortunate in not having read the exhaustive study recently published in England, Dr James Kerr's "Fundamentals of School Health" His subject, moreover, is so large that it could only be compassed by either limiting its scope to the features peculiar to this age or by dealing with it generally without going into detail In the main, he has adopted the second course, and a good deal of his matter is of general application, for example, he includes a comparison of the climatic conditions of France and the U S A which is well set forth and interesting in itself, but can hardly be said to concern peculiarly the child of 10 He gives also a lucid collection of statistics on height and weight with an account of the Pelidisi formula and some figures on the distribution of thyroid insufficiency and its treatment, which show how widespread the trouble is He quotes from THE LANCET (1926, ii, 669) the statement of Dr R H Vercoe that children of 10 are particularly liable to rheumatism One of his sections is modestly called "Des banalités assez banales," but the critic would be wrong if he thought the precepts valueless For example, if the importance of a regular action of the bowel in children were realised, much trouble and illness in later life would be avoided, and if the futility of having the hair singed and the small value of many special soaps were appreciated much time and money would be saved Again, it is well known that "the pulse, respiration, and temperature are more readily modified in children than in adults by trifling causes and nervous influences" but if parents (and occasionally medical men) always kept this fact before them, they would be spared much needless anxiety

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[4] See G Schröder On Specific Stimulation Therapy and Protective Inoculation in Tuberculosis THE LANCET Jan 22nd 1927.

Some Problems
OF THE
MENSTRUAL FUNCTION,
WITH OBSERVATIONS ON THE RELATION OF THE GRAAFIAN FOLLICLE AND CORPUS LUTEUM TO PATHOLOGICAL UTERINE HÆMORRHAGE.

An Address read before the Edinburgh Obstetrical Society on May 11th, 1927,

By BECKWITH WHITEHOUSE, M S Lond,
Ch M Birm, F R C S Eng,

PROFESSOR OF OBSTETRICS AND DISEASES OF WOMEN UNIVERSITY
OF BIRMINGHAM HONORARY GYNÆCOLOGICAL SURGEON,
GENERAL HOSPITAL, BIRMINGHAM

There is nothing. I think, more stimulating to research than to have work thoroughly discussed under the critical eye of friends A worker in his own den whether that den be the hospital ward or a pathological laboratory. is apt sooner or later to fall into a groove Theory is liable to become an obsession and without the therapeutic stimulus of free and open discussion the result of research may be but an abortion—the unfinished and incomplete effigy of what might have been a real and beautiful entity It is in this spirit, therefore that I venture to submit certain observations on the menstrual function which have interested me during my work in the Midlands

Now the phenomena associated with the menstrual function may be studied in various ways Briefly, these may be stated as follows —

(a) By a comparison with the sexual phenomena noted in other species in the mammalian tree.

(b) By a study of material obtained at operation at different periods in the sexual cycle, and especially during the actual menstrual function.

(c) By the investigation of the actual function especially of the menstrual discharge, both in health and disease

(d) By noting the effect both immediate and remote of excision of parts of the sexual apparatus at different periods of the sexual cycle.

(e) By the observation in animals and ' homo " of the effect of injecting various tissue extracts.

These are the lines upon which we are working in Birmingham and which as time goes on have altered many of my preconceived ideas with regard to menstruation.

The Nature of the Menstrual Function.

The first question that I propose to discuss is. ' What is the menstrual function in the genus homo ? ' The generally accepted view. of course. is that it is a preparation of the uterus for the reception of the fertilised ovum. In other words, that it corresponds to the stage of pro-œstrum in the lower *mammals* That this is not entirely correct I am firmly convinced from data which I shall shortly place before you In order to make the position clear, however it will be necessary to refer briefly to the phenomena associated with the sexual cycle in other mammalian types

The period of the year when physiological activity of the reproductive system in mammals occurs has been called by Heape the " sexual season " At other times in the majority of wild species the reproductive organs are quiescent. During the sexual season which, in the wild state, occurs usually but once a year, the female experiences a series of cyclical periods of sexual activity Each of these successive periods during the sexual season constitutes an " œstrus cycle," divided by Heape into four subsections .—

(1) Anœstrum, or period of rest.

(2) Pro-œstrum, or period of endometrial growth and functional activity.

(3) Œstrum or period of desire, when fertilisation is effected.

(4) Pregnancy, or " pseudo-pregnancy "

During the anœstrum *or rest period the uterus is* in a state of quiescence Its glands are small and the organ is relatively anæmic The ovaries, so far as the Graafian follicles are concerned are also inactive It is a period of slow growth and development of the follicles which do not appear on the surface of the ovaries until the succeeding stage of pro-œstrum.

With the advent of ' pro-œstrum ' or " coming on heat functional activity of the sexual apparatus is initiated The ripe follicles project on the surface of the ovary and coincidently with their full development the endometrium exhibits evidence of increased growth and vascularity. The glands secrete, and the congestion of the stroma is so great that rupture of the thin-walled capillaries occurs with extravasation of blood into the surrounding tissue. This extravasation and flushing of the endometrium with blood is so extreme that not only does it occasionally lead to disruption of the glands and the appearance of red cells in their lumina but also in some animals, as the bitch, to a partial breach of surface of the endometrium and the appearance of external hæmorrhage per vaginam. We *must note* however, that although pro-œstrum is always associated with increased vascularity of the endometrium and glandular activity it is only in a few mammalian types that hyperæmia is so extreme as to give rise to external hæmorrhage from the uterus The more common phenomena is profuse secretion of the glands only, with a slight superficial desquamation of the cornified cells of the vagina. The appearance of these cornified cells in the secretion contained in the vagina has been made use of by Papanicolau. Wright and Dodds. and others as evidence of pro-œstrum in their investigations of the sexual cycle in rodents

Pro-œstrum is followed directly by œstrum, which in the majority of mammals is the period when coition occurs. It is also in many animals, but by no means all, the point in the sex cycle when ovulation occurs from the *ripe follicle. Œstrum lasts* from a few hours, as in the sheep, to about a week in the case of the bitch It is interesting to note in types where no denudation of the endometrium occurs during pro-œstrum that œstrum is comparatively a short period as compared with other animals as the bitch, where regeneration of tissue is necessary. During œstrum activity of the uterine glands continues and the uterine *cavity contains much secretion* Leucocytes take the place of the ' cornified cells " in the vagina, and their presence is an indication of the onset of this stage.

Now, if fertilisation does not occur, a state of pseudo-pregnancy supervenes, which is of particular interest to us as gynæcologists. This state, in essential anatomical details so far as the ovary, uterus and mammary glands are concerned resembles a condition of true pregnancy. The variation is merely one of degree.

In the ovary the corpus luteum resulting from the ruptured Graafian follicle persists throughout pseudo-pregnancy and towards the end of the period assumes the yellow colour due to the lutein lipoid The uterus exhibits *increased* vascularity, and the endometrium. both stroma and glands, undergoes considerable hypertrophy. This hypertrophy in both macroscopic and microscopic detail is to be regarded as an early decidua. The retention of secretion of the uterine glands may, in fact, be the equivalent of what in pregnant ungulates is known as " uterine milk," a possible source of nutrition to the developing ovum In this connexion I would ask you to remember the high calcium content of the secretion of the corporeal uterine glands. If it is not required by pregnancy it is discarded, and this accounts for the high calcium content in the menstrual lochia of the human female

At the end of pseudo-pregnancy, the actual duration of which is a very variable quantity in different animals, a stage of involution sets in characterised by degeneration of the endometrium or decidua, and in some instances by definite necrosis associated with hæmorrhage In the bitch, whilst bleeding occurs at this stage also into the tissues of the endometrium, there is no external hæmorrhage In other mammals —e g , the cow—a definite post-œstral hæmorrhage occurs, forming the so-called "menstrual clot" This is thought by Hammond to coincide with the termination of a short pseudo-pregnancy, and he is probably right When the pseudo-pregnancy is short it will be readily understood that hæmorrhage is more likely to be a feature of the tissue necrosis that follows its termination, owing to the embryonic state of the pseudo-decidua

We therefore arrive at the very important observation that in the mammalia hæmorrhage from the genital tract can and does occur in different species at the following points in the sexual cycle

(1) During pro-œstrum, as a result of the local hyperæmia of the endometrium incidental to this physiological state —cf, the bitch

(2) At the end of pseudo-pregnancy, resulting from degeneration of the false decidua and necrosis of this structure —cf, the cow

In other types—e g , the sheep, sow, mare, and various rodents—no external hæmorrhage into the uterine cavity occurs at all, either during the stage of pro-œstral congestion or during involution at the end of pseudo-pregnancy Now the mammalia naturally fall into two well-defined groups —

(*a*) Species in which the sexual season is associated with but one complete œstral cycle—the so-called "mon-œstrus type" of Heape

(*b*) Animals in which there is a recurrence of short œstral cycles at regular intervals throughout the sexual season—the "poly-œstrus type"

Amongst poly-œstral types much variation exists, both in duration and kind, with regard to the various units of the œstral cycle Generally speaking, however, it may be said that the sex cycle of the poly-œstral animal differs from that of the mon-œstral in the following particulars —

1 Anœstrum may be absent, as in the primates

2 Pro-œstrum is short and, in practically all species, is characterised only by congestion of the endometrium with increased activity of the uterine glands, but *no external hæmorrhage*

(3) Œstrum is very short and may be only a matter of a few hours

(4) Pseudo-pregnancy is also abbreviated, and its termination may be associated with hæmorrhage from the uterine cavity

N B —The brief pseudo-pregnancy between the recurring short cycles of poly-œstral animals was wrongly regarded by Heape as being a short rest period and called by him the "di-œstrum" Using the same terminology Heape calls the short sex cycle of the poly-œstral mammal the "di-œstrus cycle"

Although the poly-œstral state occurs naturally in certain wild species, particularly rodents, it is a fact that in domestic types it appears to be the direct outcome of selective breeding, altered feeding, and changed environment Marshall has drawn attention to the fact that whilst the wild sheep is mon-œstral, the Scottish "blackface" in the Highlands has two di-œstral cycles in the sexual season The same breed under the improved conditions of the lowlands increases the cycles to five or six On the other hand various English breeds—e g , the "Dorset horn"—exhibit still further activity and frequently have two sets of lambs in the year With the merinos of New South Wales the di-œstral cycles succeed one another throughout the year and there is a complete absence of anœstrum The purpose of such extreme cyclical sex activity is, of course, to increase the possibility of pregnancy, and so promote the fecundity of the species The artificial development of the poly-œstral from the mon-œstral type as a result of feeding and environment is an interesting and important aspect of comparative physiology to the gynæcologist Recently Beaumont and Dodds have shown the importance which certain foods rich in vitamin E—e g , wheat, peas, lettuce &c —have upon the reproductive function It is, I think, rather an interesting coincidence that in the arid tracts of the Sahara the only sustenance available for the herds of goats is a food particularly rich in this vitamin—viz , the Alfa grass

OVULATION AND THE SEX CYCLE

Let us next consider the position that ovulation occupies in the sexual cycle In the majority of poly-œstral animals, rupture of the Graafian follicle occurs either during or shortly after œstrus In a few types —e g , the rabbit and cat—pro-œstrum and œstrum are apparently fused, and ovulation *only* occurs a few hours after coitus In the absence of coitus there is no dehiscence and no formation of a corpus luteum Under these conditions pseudo-pregnancy is absent and a prolonged œstrus passes insensibly into a state of anœstrum The unruptured follicles in the ovary become atretic and degenerate, with hæmorrhage into their cavities, a fact of considerable interest in a possible similar production of fibrocystic ovaries in the human female

When coitus occurs with a vasectomised male in the case of the rabbit or cat, a corpus luteum forms as usual, followed by the characteristic decidual development associated with pseudo-pregnancy

In the primates a degree of complexity is found with regard to the sexual cycle and ovulation which appears to have caused some difficulty in the proper interpretation and appreciation of the physiological facts accompanying the clinical phenomena In both man and monkeys the sexual life of the female from puberty to the menopause consists of a constantly recurring series of short œstral cycles There is no anœstrum, and the sexual cycles are consecutive and continuous There appears to be no doubt, however, that each cycle, as in other poly-œstral types, consists of a pro-œstrum, œstrum, and a pseudo-pregnancy

Although monkeys exhibit an unbroken succession of such cycles, it is very interesting to find that in certain types breeding is restricted to certain periods of the year It is evident, therefore, that *fertile* ovulation must be carefully considered as being a phenomenon apart from pro-œstrum. Corner has made the observation that in some monkeys when ovulation has not taken place and there is consequently no corpus luteum and pseudo-pregnancy, menstrual hyperæmia still occurs

Ovulation in the monkey, according to Corner's observations, takes place between the fourteenth and sixteenth days of the menstrual or sexual cycle This corresponds to the recent work on the human species by W. Shaw and others who, by a study of the life-history of the corpus luteum, have proved that ovulation in *homo* occurs between the thirteenth and seventeenth days of the menstrual cycle Ovulation in both man and monkeys is generally independent of coition I say "generally" because in some fibrocystic ovaries examined from single women I have on occasion failed to find any evidence of recent or remote lutein tissue May it be suggested that this is an atavistic state of sexual function ?

In both man and monkeys under domesticated and, therefore, artificial conditions, coitus occurs at any time during the menstrual cycle There is some evidence that a short œstral period does occur in the human female immediately after the menstrual function, but generally speaking it appears to be independent of the sexual cycle In fact, as we know, the sexual stimulus persists after complete ablation of the essential sexual organs, at any rate during the period of active sexual life As Marshall has pointed out, luxurious conditions favour the prolongation of œstrum, and "in some of the lower animals when stimulated by abundant food-supply (e g, domesticated rabbits) coition often occurs during early pregnancy, when it can serve no purpose in perpetuating the race."

In the human species the difficulties which arise in arriving at a proper conception of the menstrual function are minimised, I think, if we remember that pro-œstrum and œstrum provide one set of phenomena. Ovulation and pseudo-pregnancy provide another. In the human female the picture is complicated by the very simple fact that both sets of phenomena overlap.

Ovulation occurs between the thirteenth and seventeenth days of the menstrual cycle. This observation of Schroeder's and W. Shaw's I have repeatedly confirmed from the investigation of ovaries in relation with the menstrual cycle in a series of laparotomies performed for various indications.

From the date of ovulation a state of pseudo-pregnancy exists until its termination about the twenty-eighth day of the period, when necrosis of the menstrual decidua takes place and external hæmorrhage commences. Pari passu with the period of completion of the pseudo-pregnancy a state of pro-œstrum develops which reaches its acme also about the twenty-eighth day of the cycle, but persists during the abortion of the pseudo-pregnancy. This is followed at the conclusion of the menstrual hæmorrhage by a short œstral period, Nature's provision to promote fertilisation of the ovum about to be liberated from one of the succeeding follicles undergoing maturation.

The menstrual discharge in the human female, therefore normally contains blood derived from the endometrium as a result of two distinct factors.—

(a) Hæmorrhage resulting from necrosis of the endometrium caused by abortion of the pseudo-pregnant decidua.

(b) Blood produced by rupture of the capillaries caused by pro-œstral hyperæmia.

Appreciation of this fact—viz., that menstruation in the primates is a composite process involving two separate and distinct functions each subserving a special physiological purpose but overlapping the other in order to secure the maximum effect in the shortest time, throws considerable light upon what otherwise is a complex and difficult problem.

I will give you an analogy. The menstrual function may be compared with the stage of a theatre between two acts. One set of scene-shifters are busy removing the paraphernalia of the last scene whilst *another* are engaged in the same place and at the *same* time in reconstruction for the next act. Both are working together at top pressure and occasionally, I am afraid, one gets in the way of the other!

Now it is possible to study both sets of phenomena independently, and in considering the recent work that has been and is being done on the menstrual function, it is important to keep this distinction well to the front. My own observations, like those of Frankel, Halban, Schroeder, W. Shaw, and others, are more concerned with the investigation of what may be termed the "pseudo-pregnant" aspect of menstruation. On the other hand the work of Adler, Allen and Doisy, Marshall and Dixon and Dodds and Wright has been mainly in relation with the isolation and function of the hormone which produces "pro-œstrum" and "œstrum."

It is unnecessary to detail at any length the anatomical features of the human endometrium at different stages of the sexual cycle. The appearance of the so-called "constructive," "destructive," and resting stages are sufficiently well known. Too much stress, however, has, I think, been laid upon the sharp demarcation of these phases. It is far more important to remember that the endometrium in health from puberty to the completed menopause is never actually at rest. It is always either functioning or preparing to function. As Schroeder has pointed out there is evidence of commencing *secretory* activity of the uterine glands from about the thirteenth to the seventeenth day of the menstrual cycle. This activity increases, but as I have shown elsewhere, there is also an increasing *retention* of secretion as the cycle advances owing to constriction of the ducts by the developing decidual cells of the stratum compactum. It is not until some necrosis of the stratum compactum occurs on the first day of the menstrual function that there is a sudden out-pouring of the pent-up secretion.

As a matter of fact, a few dilated glands with "fern-like" processes are constantly to be seen in sections of the endometrium from the seventeenth day of the cycle onwards. They, of course, become more numerous as the length of the cycle increases owing to the construction of more ducts. In the fully developed menstrual decidua these dilated glands form a very distinct feature in transverse sections through the uterine cavity and constitute the "stratum spongiosum." With the complete development of the "stratum compactum" it will be understood that liberation of the corporeal secretion is not possible until necrosis of the superficial layers of the endometrium has removed the constriction of the ducts.

This is an important fact in view of the criticism that the formation of a menstrual clot is a normal part of the physiological mechanism of the menstrual function in the human female. It has been contended that the formation of a thrombus is impossible in the presence of a thrombolysin. The answer to this criticism is that the thrombolysin contained in the secretion of the uterine glands is not liberated until the thrombus is already formed.

That a menstrual clot in the uterine cavity *is* formed during the process of molecular necrosis of the menstrual decidua is certain; the original observation has been repeated on several occasions and it has been confirmed by W. Shaw and others. It is also equally certain that the menstrual lochia in health contains frequently no clots, although it is by no means uncommon to find in the discharge very small thrombi in process of disintegration. The discharge normally consists of the products of endometrial necrosis and autolysis with the secretion of the corporeal glands. It therefore contains no fibrin or fibrinogen, but it does contain a high percentage of calcium, possibly necessary should pregnancy occur, but otherwise discarded.

RELATION OF THE CORPUS LUTEUM TO THE MENSTRUAL DECIDUA

During the last quarter of a century a great deal of work has been done in the investigation of the structure and life-history of the corpus luteum, and especially the relation of this body to the menstrual function.

To Fränkel belongs the credit of first drawing attention to the relationship which exists between the *corpus luteum and menstruation*. By destroying the corpus luteum with the actual cautery he altered the menstrual rhythm and in the case of pregnant animals he produced abortion. As a result of these experiments Fränkel came to the conclusion that the function of the corpus luteum was to maintain the nutrition of the uterus from puberty onwards and to prepare the endometrium for the embedding of the ovum. He also thought that the lutein hormone was responsible for the local hyperæmia which accompanies menstruation. Fränkel's work was criticised chiefly on the basis that the cautery did not destroy all the lutein tissue in the ovary.

Halban therefore carried the investigation a step further by actually excising the corpus luteum in 40 cases. He found that uterine hæmorrhage occurred in 92.5 per cent. of the cases so treated. Strangely enough, however, this observer made no *attempt* to correlate the hæmorrhage with menstruation and, in fact, came to the conclusion that the menstrual function was not due to the corpus luteum but to ovulation. Halban thought that the lutein hormone exerted an inhibitory effect both upon menstruation and ovulation.

Meyer and Ruge, Miller and Schroeder, however, by studying the development of corpora lutea in relation with the anatomical appearances of the endometrium brought forward evidence in support of Fränkel's original thesis Schroeder, in fact, pointed out that whilst a young corpus luteum is always present at the commencement of endometrial activity, a mature corpus luteum is associated with what is generally recognised as the premenstrual state of the endometrium Furthermore, degeneration of the corpus luteum is found during the period of active endometrial necrosis

This was the position when, in 1926, I decided to repeat Halban's experiments, and at the same time to make a careful study of the endometrium should uterine hæmorrhage occur The result of my first observation, described in detail in the *Journal of Obstetrics and Gynæcology*, vol xxxiii, No 3, was to convince me that the effect of excision of the corpus luteum was to produce necrosis of the uterine endometrium Material was obtained which proved quite conclusively that the uterine hæmorrhage artificially produced on the eighteenth day of the menstrual cycle by excision of the corpus luteum 39 hours previously, was in essential details identical with that of the "menstrual period." I had, in fact, antedated the normal function by ten days More interesting still, the next "period" did not occur until 44 days later or only four days later than it would have occurred had no interference with the rhythm taken place Since this paper was published further observations have been made, and I am now able to carry the deductions a step further

Twelve more opportunities have occurred of excising the corpus luteum at periods varying between the seventeenth and twenty-fifth days of the menstrual cycle, and in every instance uterine hæmorrhage with endometrial necrosis has followed within 36–48 hours of the operation In each case also the next following menstrual period occurred within a few days of the normal period had no experimental interference taken place In other words, the only alteration of the rhythm was to antedate the menstrual period directly in proportion to the date on which removal of the corpus luteum was effected

Examination of the corpora lutea which were removed showed that this structure is *normally a cystic body*, and that, although there is much proliferation of the cells of the tunica granulosa with resultant thickening of the wall, a cavity is always present containing a clear fluid. The point of rupture of the parent follicle is usually evident on the surface of the corpus luteum as a small dimple or scar The aperture is apparently closed by approximation of the growing cells of the tunica granulosa, now accepted as being identical in type with the large lutein cells of the fully developed corpus

The corpus luteum increases in size, but maintains the same grey cystic appearance until immediately before the onset of the menstrual abortion Lipoid degeneration then occurs, characterised by the appearance of the yellow pigment in the cells and hæmorrhage in the cavity Hæmorrhage is the result of degeneration and fatty necrosis, and not a sequel of dehiscence of the follicle For this observation we are indebted to Wilfred Shaw, and with his views on this point I entirely agree

The cause of lutein degeneration in association with menstruation is still a problem My own view is that it is closely related with death of the unfertilised ovum I have recently suggested that it is the result of a "negative" phase initiated by the vaccine action of the unfertilised dead ovum and the cells of the corona radiata, cells morphologically identical with the large cells of the corpus luteum

Relation of the Graafian Follicle to the Menstrual Function

It is evident from the results of excision of the functionally active corpus luteum that this body exerts an important influence upon the development of the endometrium In fact, it appears that the growth of the menstrual decidua is entirely dependent upon its proper function, and that withdrawal of its active principle is followed within 48 hours by necrosis of the endometrium It appeared a matter of interest, therefore to study the effect of similar investigations in relation with the Graafian follicle before its rupture on the thirteenth day of the cycle

On three occasions the opportunity was taken to destroy developing follicles before maturity by "needling" both ovaries It was found on each occasion that uterine hæmorrhage commenced within 48 to 72 hours of the operation All the investigations were made before the thirteenth day of the menstrual cycle and in the absence of any functioning corpus luteum These observations were interesting, but were regarded as inconclusive, since it was thought possible that the uterine hæmorrhage might be the result of pro-œstral congestion resulting from the peritoneal absorption of a follicular hormone

A further series of four observations were made of excising large Graafian follicles either by double or single partial oophorectomy In three out of the four cases uterine hæmorrhage began within 72 hours of the operation In these three cases the excision took place between the tenth and thirteenth days of the cycle In the patient where no hæmorrhage occurred the operation was performed on the seventh day of the cycle or three days after the termination of a four-day period It was concluded, therefore, from this second series of observations that the uterine hæmorrhage occurring in the first group *was* due to the destruction of the follicle and not to the absorption *of follicular hormone*

In the case of the three patients whose ovaries had been "needled" the opportunity was taken of collecting some of the liquor folliculi and amounts varying between ½ c cm to 1 c cm were injected intravenously into other patients without producing any *obvious clinical effect* The uterine hæmorrhage produced by excision of Graafian follicles differed somewhat in type from that produced by removal of the corpus luteum It was comparatively slight, somewhat irregular, and continued seven to ten days —in fact, longer than the usual menstrual bleeding and comparable with the pathological type which I have called "menostaxis" as distinct from "menorrhagia"

These observations point to the fact that not only the corpus luteum but also the Graafian follicle is responsible for the growth of the endometrium, which certainly appears logical *owing to the development* of the former from the cells of the latter

The follicular hormone, therefore, appears to be a complex body possessing more than one active principle That it contains a body capable of producing œstrus in the lower animals has been proved conclusively by the work of Adler, Fellner, Herrmann and Fränkel, Allen and Doisy, Stockhard and Papanicolau Recently Dickens, Dodds, and Wright have isolated a physiological principle in the form of an oil which stimulates œstrus in rats and which has a marked depressor action

It is only reasonable to suppose that a similar œstrus-producing principle is present in the ovaries of women, although actual physiological proof is as yet required There is certainly no evidence available to prove that the intravenous injection of liquor folliculi has any influence in the production of the menstrual hæmorrhage in the human female In fact my observations all tend to show that the uterine bleeding is produced as the result of endometrial necrosis by the withdrawal from the circulation of some principle elaborated by the follicle and the corpus luteum which is essential for its development

The œstrus-producing hormone of Dickens, Dodds, and Wright obtained from pigs' ovaries was not, however, confined to the liquor folliculi It was present in extracts from the whole ovaries, and these workers state definitely that their findings do not support the contention of Allen and Doisy that the active principle is mainly a feature of the liquor folliculi Allen and Doisy themselves did not find it in extracts of the corpus luteum On the other hand, Samson Wright has informed me that he and his co-workers have isolated the hormone not only from the ovaries but also from the placenta and various other tissues submitted to them from the gynæcological operating theatre

In 1914 I called attention to the presence of an œstrus-producing hormone in the uterine secretion of rodents. and it seems probable that the existence of this active principle is only dependent upon the ovaries in a secondary sense It may. indeed, be produced in tissues other than the ovaries—e g. the thyroid—as is evidenced in the human species by the persistence of the sexual instinct after complete ablation of the uterus and ovaries or the occasional occurrence of endometrial congestion and hæmorrhage at a considerable period after double oöphorectomy.

The result of clinical investigation on human ovaries has brought to light therefore the following facts —

(1) That removal of the physiologically active corpus luteum at any stage of its development during the menstrual cycle is followed directly by molecular necrosis of the endometrium.

(2) That destruction of mature Graafian follicles before rupture is also followed by endometrial necrosis

(3) That excision of mature Graafian follicles likewise results in necrosis of the endometrium

(4) That injection of liquor folliculi does not produce uterine hæmorrhage

It is evident. therefore that both the Graafian follicle and the corpus luteum contain an active principle which is essential for the proper development and function of the endometrium If it is withdrawn from the circulation necrosis of the superficial layers of the endometrium ensues On the other hand, its constant stimulus promotes development of the endometrium until the mature decidua is formed

This active principle is probably produced from the cells of the tunica granulosa and inasmuch as it is a feature of the secretion of both the follicle and corpus luteum neither the name ' folliculin " nor " lutein " appears entirely suitable As an alternative I suggest the term " *ovarin* " to designate the hormone which is essential for the proper growth and function of the endometrial stroma.

The recently introduced term " œstrin " should be reserved for the other œstrus-producing hormone of the follicle which experiment shows is not present in the corpus luteum " Œstrin " is probably responsible for the pre-menstrual congestion and functional activity of the uterine glands " Ovarin ' on the other hand controls the growth of the stroma. and the withdrawal of this hormone from the circulation initiates endometrial necrosis with hæmorrhage from the congested stroma

The significance of this conception of the menstrual function has, I think an important corollary in the explanation of some cases of pathological uterine hæmorrhage If endometrial necrosis ensues upon the destruction or excision of the maturing follicle and the corpus luteum, it is reasonable to suppose that similar trauma effected by disease is followed by like results This is. indeed. the case and many instances of irregular uterine hæmorrhage in association with fibrocystic ovaries prolapsed ovaries and chronic inflammatory disease of the uterine adnexa are I think due to the death of maturing Graafian follicles and pathological corpora lutea Recently I have investigated several ovaries from cases of large fibroids where metrostaxis as well as menorrhagia has been a feature and in every instance I have found large cystic unruptured follicles as well as corpora lutea in various stages of degeneration The follicular or lutein cysts in many instances contained blood It seems probable. therefore that in these cases both the uterine hæmorrhage and the sterility have a common ovarian origin The sterility is due to unruptured follicles and the metrostaxis to the periodical irregular cutting off of the supply of " ovarin " It is in these and similar cases infinitely better for a Graafian follicle never to develop at all. Partial maturity with subsequent death is probably always associated with endometrial necrosis and hæmorrhage, such as is commonly found during the years of the menopause, and at puberty Excess of the " ovarin " hormone is, I think, one of the causes of precocious decidual development and, as I have shown elsewhere, it appears to be a factor in the production of severe menstrual pain.

CONCLUSION.

In conclusion may I say just a word with regard to the therapeutic value of so-called ovarian and lutein extracts. I am afraid that I cannot claim hitherto to have had any considerable and *sustained* success with any single extract at present on the market This is more particularly the case in the control of irregular functional uterine hæmorrhage —metrostaxis in other words Every now and again one has an apparent success, and then in another case with precisely a similar pathological picture and using the same commercial preparation no result whatsoever is obtained Now. I think that the cause of these discrepancies lies in the fact that in the first place whole animal ovaries are used in the preparation of the extract In the second place I doubt very much whether many commercial extracts are made when " ovarin ' is present in the organs used For a preparation to have any physiological action in the prevention of premature endometrial necrosis and, therefore hæmorrhage it should be made either from *mature* Graafian follicles or from *functioning* corpora lutea—not the degenerated yellow bodies " which are but the empty shell and from which the inmate has escaped.

Not until extracts are always made from animals' ovaries during either pro-œstrum or the early months of pregnancy do I expect on physiological grounds. to obtain uniformly satisfactory therapeutic results.

SOME DIFFICULTIES IN THE DIAGNOSIS OF ACUTE LEUKÆMIA.

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IN reviewing the clinical and pathological aspects of the six cases of acute leukæmia that have come to our notice in the past 18 months the increase in the incidence of all types of leukæmia has been rendered more noticeable. It seems unlikely that the advent. within so short a time. of three cases of the rare acute lymphatic type of the disease should be coincidence During the same period of the more chronic forms no less than 13 cases of lymphatic leukæmia and 11 cases of myelocytic leukæmia have been examined and diagnosed at the Middlesex Hospital whilst Prof Sholto Douglas[1] has drawn attention to the large numbers of cases occurring at Sheffield during recent years and suggested the possibility of the disease being sometimes epidemic.

In describing and labelling these cases we are at the outset confronted with the lack of agreement of various authorities with regard to the incidence of the various forms and the means of differentiating them. Some of the opinions may be quoted here. Thursfield[2] does not distinguish the various types of acute leukæmia, and says " the lymphocyte of acute leukæmia is not the lymphocyte of the normal blood and is probably (Cabot) a marrow rather than a lymph gland cell " Gulland and Goodall[3] state that myeloblastic (acute) leukæmia is the more frequent and that acute lymphatic leukæmia is very rare and only distinguished from the myeloblastic variety by the Jenner-Giemsa method of staining—a process which the authors describe as “a rather tricky exercise in staining gymnastics” With this opinion we concur

In another publication Gulland[4] writes that “the acute myeloblastic and lymphatic forms (of leukæmia) are probably the most common,” but at a later date he[5] is reported as stating, “I am becoming somewhat sceptical of the existence of a really acute lymphatic form” He explains this attitude by the fact that many of the myeloblastic cases are definitely mixed at the outset and only become purely myeloblastic in the terminal stage MacCallum's[6] experience is that acute lymphoid leukæmia is more common than the chronic form but that the cells are larger and that some cases formerly classified as acute lymphatic are now known to be myeloid Todd,[7] under acute myelogenous leukæmia, says, “the predominating leucocyte is the most immature member of the bone-marrow series—i e, the myeloblast” He mentions that in some cases the cells are so very immature that the oxidase test fails, and it may be impossible to distinguish the disease from acute lymphatic leukæmia

A consideration of the origin of the various forms of leucocyte might be expected to throw some light on the immature cells found in the leukæmias, but here again there are different schools of thought—some adhering to a monophylitic and others to a polyphylitic theory. The subject is therefore one of some difficulty, and we can only hope with Gulland that some more satisfactory method of differentiating large immature leucocytes than the Jenner-Giemsa stain and the oxidase reaction will be devised We consider Lambright's[8] method of oxidase staining a great improvement on Goodpasteur's, and we are indebted to Dr J Allman Powell for drawing our attention to the method.

With these cases of leukæmia we have included one of glandular fever for, as the account will show, it presented in the early stages very real difficulties of diagnosis, and it is possible that sporadic cases such as the one described are more common than is supposed

CASE 1 *Acute Lymphatic Leukæmia* —A man, aged 53, was admitted to the Middlesex Hospital on June 4th, 1926, under Dr R A. Young He died five days after admission, the duration of life from the initial symptoms of headache and sweating being six weeks He was constipated throughout his whole illness and whilst in hospital enemata produced only small blood-stained results

On admission the skin was of pale lemon colour, the mucous membranes were pale, there were purpuric spots on the abdomen, and a large subcutaneous hæmorrhage under the right eye There was profuse hæmaturia (which had been present for two days prior to admission) and bleeding from the gums The spleen was just palpable and there was tenderness below the liver There was no glandular enlargement Temperature 99° F, pulse 90, respirations 26

During the five days the patient was under observation he became progressively weaker, vomited frequently, and had a subnormal swinging temperature Blood cultures were sterile and the only blood count performed gave the following result hæmoglobin, 28 per cent, red cells, 1,104,000, colour-index, 1 3, leucocytes, 10,200, polymorphonuclears, 26 per cent, lymphocytes, 68 per cent; large mononuclears, 6 per cent Two normoblasts per 100 leucocytes, poikilocytosis, and a fair number of polychromatic cells About 75 per cent of the lymphocytes were of large-cell type and large numbers of cells consisted only of “smeared nuclei” Goodpasteur's oxidase stain gave a negative result for oxidase granules

This is a typical case of acute leukæmia and it is noteworthy that the patient was a medical man who had worked with X rays for many years Gulland[4] records a case of a woman who had extensive X ray treatment for malignant metastases and who had a large spleen with a blood picture of acute myelocythæmia, the blood count and spleen returned to normal after cessation of the X ray treatment It is possible, therefore, that our case resulted from the prolonged X ray exposure inducing a leucoblastic crisis

Many hæmatologists deny the existence of an acute lymphatic leukæmia of large-celled type owing to the acknowledged difficulty in distinguishing the cells from myeloblasts Oxidase staining is admittedly often unsatisfactory, but when carefully controlled with normal and with known pathological blood it is certainly of value In diagnosing this case as acute lymphatic leukæmia rather than myeloblastic, we base our opinion on the negative oxidase reaction, the presence of “smeared nuclei,” and the scantiness of abnormal red cells, particularly megaloblasts and macrocytes—a factor usually well marked in myeloblastic and myelocytic leukæmia There is no doubt that this case was not a terminal phase of the more chronic type as the patient, on account of his occupation, had had his blood examined at regular intervals

CASE 2

Date in 1926	Hæmoglobin per cent	Red cells.	Colour index	Leucocytes	Polymorphonuclear per cent	Lymphocytes per cent	Nucleated reds	Remarks
April 7th	30	1,176,000	1 4	196,800	2	98	0	Poikilocytosis present Predominant cell large lymphocyte (70 per cent)
,, 21st	30	1,050,000	1 5	222,000	1	99	0	Poikilocytosis Large lymphocytes (70 %)
,, 29th	20	620,000	1 7	167,000	1	99	2 megaloblasts	Poikilocytosis and macrocytes Radium applied five days previous to count Large lymphocytes (50 per cent)
May 6th	22	770,000	1 5	135,000	3	97	2 megaloblasts	Poikilocytosis and macrocytes Predominant cell small lymphocytes (60 %)
,, 14th	16	1,700,000	0 5	96,600	1	99	2 megaloblasts 1 normoblast	Poikilocytes, macrocytes Death five days later Predominant cell large lymphocytes (70 per cent)

CASE 2 *Probably the Terminal Crisis of a Chronic Lymphatic Leukæmia* —A man, aged 32, was admitted to the Middlesex Hospital on April 7th, 1926, under Dr C E Lakin He died six weeks afterwards, the duration of symptoms prior to admission being three weeks He had first noticed bleeding from the gums, bilateral parotid swellings, sweating, loss of hearing, and increasing weakness.

On admission the gums were swollen, red, and bleeding, perspiration was profuse, and the patient was very deaf Temperature 100° F, pulse 140, respirations 24 The spleen was greatly enlarged and the liver was palpable one fingerbreadth below the costal margin Cervical, axillary, and inguinal glands were enlarged and the tonsils and adenoids (probably accounting for the deafness) were very much hypertrophied Retinal hæmorrhages were present All the glandular swellings, including the spleen, were remarkably soft

The clinical course of the case was marked by an evening temperature varying from 100° to 101 5°, periodic attacks of dyspnœa, enlargement of the veins over the chest, and obstinate bleeding from the gums

Treatment included mouth washes, liquor arsenicalis, and the application of radium over the splenic area but the latter resulted in so great a destruction of red cells that it was discontinued

Blood cultures were sterile The sedimentation of red corpuscles was 7 5 c cm There was a very marked thrombopenia and a great tendency for the blood to agglutinate as soon as a drop was placed on a slide The patient belonged to Group II of the blood groups In view of the marked auto-agglutinating power of his serum, it was tested against normal red cells of Group II, but without any effect The record of blood examinations was as under —

As in Case 1, the predominant cell was (with the one exception commented on below) always a large lymphocyte, and of these quite 50 per cent. were present as "smeared nuclei" Both Goodpasteur's and Lambright's oxidase staining reactions were negative

The most interesting feature of the case was the result of the application of radium to the splenic area The rather drastic effect on the red cells was not unexpected, but the marked alteration in the leucocytic picture—from large to small lymphocyte predominance—was not foreseen The blood picture reverted to its former type a week later—that is, within 20 days of the application of radium

In assuming the case to be the terminal phase of an old-standing case rather than a primary acute leukæmia, we are influenced by the clinical and hæmatological findings rather than by the history Chronic lymphatic leukæmia often exists for years without symptoms, and it is probable that most cases which have high leucocyte counts and large spleens are of long standing The changes in the red cells were characteristic of lymphatic rather than myeloblastic—viz, reduction in numbers and in hæmoglobin rather than by the appearance of grossly abnormal cells

CASE 3 *Acute Myeloblastic Leukæmia* —A man, aged 34, was admitted to the Middlesex Hospital on Feb 4th, 1925, under Dr C E Lakin He died two weeks after admission, the time from the onset of symptoms to death being five weeks He first attended the dental hospital on account of swelling and bleeding of the gums and soon after noticed a swelling in the neck which was followed by purpuric spots on the abdomen

On admission the gums were necrotic and bleeding, there were large, soft glands in the neck and a few small discrete, hard, painless glands in the axillæ and groins, there were purpuric spots on the abdomen and legs The spleen was palpable two fingers-breadth below the costal margin Temperature 101° F, pulse 104, respirations 22 The clinical course was marked by an evening rise of temperature reaching 101°, and progressive necrosis of the gums There was suppression of urine during the last 48 hours of life Treatment consisted of mouth washes, arsenic, and later, ferri et ammon cit

Blood cultures were sterile Cultures of the pharynx grew *B proteus vulgaris* and streptococci A blood count ten days before death showed hæmoglobin, 58 per cent, colour-index, 0 9, red cells, 3,200,000, leucocytes, 112,800, polymorphonuclears, 11 per cent., promyelocytes, 11 per cent, non-granular cells showing nucleoli, 34 per cent, non granular cells without nucleoli, 42 per cent, large mononuclears, 2 per cent. By Goodpasteur's stain the percentage of oxidase containing leucocytes was 43, macrocytes numerous, 4 megaloblasts per 100 leucocytes

Post mortem Examination —General glandular enlargement, particularly in the cervical region where the glands were soft and hæmorrhagic Liver, 72 oz, spleen, 16 oz, kidneys, each 12 oz —enlarged and pale with changes in the cortex and hæmorrhages in the pelves, causing obstruction on both sides, stomach contained altered blood and showed petechial hæmorrhages The intestines showed hypertrophied lymphoid tissue with a few scattered petechiæ on the mucous membrane, there was great hyperplasia of the lymphoid tissue at the back of the tongue The heart showed myocardial degeneration with a few scattered petechiæ on the pericardium Sections of the liver, kidney, intestine, spleen, and glands showed extensive infiltration with myelocytes and promyelocytes. No lymphatic infiltration was evident

Comment on this case is practically confined to the blood count, as the post-mortem sections gave a clear indication of its myeloblastic nature

In analysing the differential count, the difficulty arose as to whether the "non-granular cells without nucleoli" were myeloblasts or large lymphocytes Goodpasteur's stain was in this case no definite help, though the high percentage of oxidase containing leucocytes confirmed the fact that most of the non-granular cells were myeloblasts It is not improbable, in view of the extensive lymphatic hyperplasia found post mortem, that at one phase of the disease it was of mixed type and that some, if not all, of the non-granular cells without nucleoli were lymphocytes. The marked changes in the red cells, despite a relatively small reduction in numbers, was a point in favour of myeloblastic rather than lymphatic leukæmia The relatively small splenic enlargement influenced the diagnosis of primary acute myeloblastic leukæmia rather than the terminal phase of a chronic disease The case shows features which contrast with those of Case 6

CASE 4 *Acute Lymphatic Leukæmia* —A single woman of 38 came under Mr J C R Braine-Hartnell in January, 1926, with an enlarged gland in the neck which had been present for one month A week later other glandular enlargements developed in the neck, petechiæ appeared, and there was bleeding from the gums There was no splenic enlargement. A blood examination gave the following result hæmoglobin, 75 per cent, red cells, 1,600,000, colour-index, 0 8, leucocytes, 21,940, polymorphonuclears, 32 6; lymphocytes, 58 0, large mononuclears, 2 8, neutrophil myelocytes, 3 4, transitional forms, 3 4, 5 normoblasts per 100 leucocytes Her condition rapidly deteriorated and a blood examination 11 days later showed hæmoglobin, 70 per cent, red cells, 1,395,000, colour-index, 0 8, leucocytes, 26,300, polymorphs, 13 7, lymphocytes, 70 0, large mononuclears, 2 0, eosinophils, 0 3, mast cells, 0 7, transitional forms, 4 3, 12 5 normoblasts per 100 leucocytes The differential count was complicated by the presence of many "smeared nuclei" and the predominant lymphocyte was of large type The patient died after a profuse uterine hæmorrhage three days later The total time from when the glandular enlargement was first noticed to death was therefore seven weeks

We base our opinion that this was an acute lymphatic leukæmia on the low leucocyte count, the differential count, the absence of splenic enlargements, and the absence of gross changes in the red cells

CASE 5 *Acute Lymphatic Leukæmia in a Child* —A girl, aged 2 years 9 months, was admitted to the Cheltenham General Hospital under the care of Dr F J Lidderdale on Nov 13th, 1925 She died on Jan 1st, 1926 The history related that five weeks before admission she had a fall from a sofa, having been perfectly well up to that time; a week later she complained of pain in the back and abdomen, she then "caught a cold" and her mother discovered swellings in the neck and armpits She had difficulty in breathing and was brought to the hospital on Nov 6th when she had definite stridor and cyanosis and looked very ill On admission to hospital seven days later her general condition was better Tubular breathing and some crepitations were present at the base of the left lung and there was some dyspnœa The abdomen was prominent and the spleen much enlarged and hard, but not tender The axillary, cervical, and inguinal glands were enlarged, firm, and discrete She had frequency of micturition and the urine which was passed about every 10 minutes was loaded with urates The temperature was subnormal for the greater part of her illness, but on Dec 29th it rose to 101 8° and thereafter varied from 99° to 101° On admission a blood examination showed hæmoglobin, 56 per cent, red cells, 5,300,000, colour-index, 0 5, leucocytes, 109,000, polymorphonuclears, 6 8, lymphocytes, 87 6; large mononuclears, 2 4, mast cells, 0 4, myeloblasts, 2 0, neutrophil myelocytes, 0 4, transitionals, 0 1; 3 normoblasts and 0 8 megaloblasts per 100 leucocytes. Of the lymphocytes, 63 8 were small and 23 8 large Films made six days later and stained by Goodpasteur's oxidase method showed 96 3 without oxidase and 3 7 with

Post mortem, 12 hours after death —Ulcerated hæmorrhagic zones at the nail bed of each thumb and some of the fingers A small intracutaneous hæmorrhage in the right frontal region Lymphatic glands in the anterior and posterior cervical triangles, the axillæ and groins were much enlarged Blood was liquid in all parts of the body Spleen, weight 12 oz, extended below the umbilicus, was firm and crushed strawberry colour on section, Malpighian bodies not distinguishable Liver 2 lb 10 oz, was pale on section. Right kidney 2½ oz, left kidney 1½ oz, with red fat in the renal pelvis Alimentary tract showed no enlarged Peyer's patches Left pleura contained 1 pint and the right 6 oz. of a blood-stained fluid Left lung, lower lobe, collapsed. The ridges of fat between ribs and pleura were enlarged and red in colour and formed small sessile masses projecting into the pleural cavity Heart muscle firm and pale Valves normal Several small hæmorrhages in the visceral pericardium Under the sternum a greyish-white mass, showing small hæmorrhages on section, extended from the manubrium down over the heart, but neither lymphatic glands nor thymus could be detected on naked-eye examination Sections of this substernal mass showed a loose connective the Jenner-Giemsa method of staining—a process which the authors describe as "a rather tricky exercise in staining gymnastics" With this opinion we concur

In another publication Gulland [4] writes that "the acute myeloblastic and lymphatic forms (of leukæmia) are probably the most common," but at a later date he [5] is reported as stating, "I am becoming somewhat sceptical of the existence of a really acute lymphatic form" He explains this attitude by the fact that many of the myeloblastic cases are definitely mixed at the outset and only become purely myeloblastic in the terminal stage MacCallum's [6] experience is that acute lymphoid leukæmia is more common than the chronic form but that the cells are larger and that some cases formerly classified as acute lymphatic are now known to be myeloid Todd,[7] under acute myelogenous leukæmia, says, "the predominating leucocyte is the most immature member of the bone-marrow series—i e, the myeloblast" He mentions that in some cases the cells are so very immature that the oxidase test fails, and it may be impossible to distinguish the disease from acute lymphatic leukæmia

A consideration of the origin of the various forms of leucocyte might be expected to throw some light on the immature cells found in the leukæmias, but here again there are different schools of thought—some adhering to a monophylitic and others to a polyphylitic theory The subject is therefore one of some difficulty, and we can only hope with Gulland that some more satisfactory method of differentiating large immature leucocytes than the Jenner-Giemsa stain and the oxidase reaction will be devised We consider Lambright's [8] method of oxidase staining a great improvement on Goodpasteur's, and we are indebted to Dr J. Allman Powell for drawing our attention to the method.

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This is a typical case of acute leukæmia and it is noteworthy that the patient was a medical man who had worked with X rays for many years Gulland [4] records a case of a woman who had extensive X ray treatment for malignant metastases and who had a large spleen with a blood picture of acute myelocythæmia, the blood count and spleen returned to normal after cessation of the X ray treatment It is possible, therefore, that our case resulted from the prolonged X ray exposure inducing a leucoblastic crisis

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Treatment included mouth washes, liquor arsenicalis, and the application of radium over the splenic area, but the latter resulted in so great a destruction of red cells that it was discontinued

Blood cultures were sterile The sedimentation of red corpuscles was 7 5 c cm. There was a very marked thrombopenia and a great *tendency* for the blood to agglutinate as soon as a drop was placed on a slide The patient belonged to *Group II of* the blood groups In was a comparatively small but gradual increase in the total lymphocytes; the differences were the absence of destructive changes in the red cells and the decline in numbers of lymphocytes with clinical improvement

It is noteworthy that glandular fever is frequently termed "infective mononucleosis," which implies an increase in the mononuclear cells Such a term is a misnomer in that the increase occurs in the lymphocytes and not the large mononuclear cells

In studying the lymphocytes of this case, one observed that the nucleus was eccentrically located and sometimes reniform. The cytoplasm was strongly basophil, contained azur granules and sometimes showed vacuoles The average size of cells was 14μ 13μ and of its nucleus 12μ × 10 25μ Lambright's stain was of considerable value.

No connexion with any other case of glandular fever could be traced nor did any inmate of the house in which the patient was nursed contract the disease The condition of the patient on June 20th gave cause for great anxiety, yet the impression gained from text-book descriptions of the disease is that of a mild pyrexial condition occurring in epidemics amongst children Our case illustrates that the disease may occur sporadically amongst adults as a severe illness with a protracted convalescence. Whilst this case was running its course there was a series of cases of illness characterised by pyrexia reddened fauces and marked cervical glandular enlargement at one of the schools in the town Two of these cases were examined and their leucocyte counts were 20.800 and 12.170 but the increase was of polymorphonuclear type.

Summary and Conclusions.

Acute leukæmia is fatal from a circle of causes; the leukæmic process invades the bone-marrow to the exclusion of erythroblastic tissue, and the accompanying hæmorrhages result in an anæmia which the reduced erythroblastic tissue cannot make good. Death occurs from anæmia and exhaustion unless the hæmorrhages previously obstruct the functions of a vital organ, such as the kidney (Case 3)

Assistance in distinguishing acute lymphatic leukæmia from acute myeloblastic leukæmia, other leukæmias, and glandular fever is given by the following points:—

1. *Splenic enlargement*—This is not marked in the acute lymphatic leukæmia of adults but is observed in children. It is not usually marked in acute myeloblastic leukæmia. Gross splenic enlargement in an adult suggests the terminal phase of a chronic or subacute leukæmia, either lymphatic or myelocytic, rather than a primary acute disease Splenic enlargement is present in some cases of glandular fever.

2 *Duration of symptoms* particularly hæmorrhages In the primary acute leukæmias the symptoms rarely exceed a few weeks If the symptoms have been present for a short time only and there is gross splenic enlargement, the probability is that the case is the terminal phase of a lymphatic rather than myelocytic, in that the former can exist in chronic form without symptoms for years whereas the latter rarely does so Hæmorrhages are absent in glandular fever.

3 *Total leucocytes*—In the acute lymphatic leukæmia of adults the number is often within normal limits and probably rarely exceeds 30,000. In children the figure may be considerably higher A high count in an adult suggests the terminal phase of a more chronic condition. In acute myeloblastic leukæmia the total figure may be considerably higher, but in the fulminating acute form it is usually low In glandular fever the usual number is from 20.000 to 30 000

4. *Type of leucocyte*—Large type lymphocytes are characteristic of acute lymphatic leukæmia and of glandular fever The presence of "smeared nuclei" is very characteristic of the lymphatic type Cases with a mixed count of large lymphocytes and megaloblasts usually terminate as pure myeloblastic. Lambright's oxidase stain is more reliable than Goodpasteur's stain or the Jenner-Giemsa method for distinguishing myeloblasts from large lymphocytes

5 *Red cells*—Reduction in numbers and hæmoglobin is characteristic of both acute types, but is most marked in acute myeloblastic leukæmia. Numerous megaloblasts and macrocytes suggest myeloblastic; they are often present with a comparatively small reduction in numbers of cells; minor abnormalities only, such as normoblasts and poikilocytes—especially if ill-marked in spite of the severe reduction in total numbers—suggest the acute lymphatic In both types the anæmia is rapidly progressive and the prognosis as to duration depends on the red cell count and hæmoglobin rather than the leucocyte count Changes in the numbers of red cells and abnormal red cells are absent in glandular fever

We are indebted to Dr R A. Young and Dr C E Lakin, physicians to the Middlesex Hospital and to Dr. J C R. Braine-Hartnell Dr Allman Powell and Dr F J Lidderdale, of the honorary staff of the Cheltenham General and Eye Hospital for their permission to publish these cases

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SULPHUR METABOLISM IN ARTHRITIS DEFORMANS.

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OF the three known forms of sulphur which are concerned in metabolism—mineral suphates, sulphur lipoids, and protein sulphur—it is the last which is the more important and has been exclusively studied in physiopathology.

The question which first arises is whether these sulphur-containing proteins have a separate metabolic history and a special function differing form that of the other proteins Recent research answers in the affirmative this double question. That the metabolic history is different is shown by the fact that in certain conditions such as inanition, convalescence, various diseases, there is not a parallel catabolism of sulphur-containing proteins, and of proteins not containing sulphur. On the other hand, whereas in the proteins of the food the ratio between sulphur and nitrogen varies between 1 7 and 14 6 : 100 the same ratio in the urine is much more fixed in the neighbourhood of 7 : 100 which shows that the organism does not catabolise all proteins indifferently but that it catabolises the sulphur-containing proteins and the non-sulphur containing proteins, so that the two are excreted in a fairly fixed ratio

That these sulphur-containing proteins have a definite and special function due to the sulfhydryl element has been shown by the works of de Ray Paillade Thunberg, Heffter, and definitely demonstrated by the brilliant researches of Sir F. Gowland Hopkins This last-named author has proved that an organic sulphur compound glutathion, tissue in which endothelial cells were prominent, together with many small thin-walled vessels, the interstices were packed with lymphocytes, no Hassall's corpuscles seen. The marrow in the sternal end of the clavicle and in the manubrium was abundant and bright red. Smears of the marrow showed large numbers of lymphocytes and when stained by Goodpasteur's oxidase method showed very few cells containing granules, nucleated red cells and myelocytes were present in small numbers.

In commenting on this case, we note that the findings agree with those of Still,[9] who says, "Leukæmia in childhood is almost always a lymphatic type . . . the excess of lymphocytes being almost always due mainly to increase of the small lymphocyte." It is noteworthy that the duration of the case was at least nine weeks and it should therefore, strictly speaking, be classified as subacute. This may probably account for the great splenic enlargement and the somewhat high total leucocyte count, though in children both these factors are apt to be more marked in acute cases than they are in adults.

duplicated—and many of them showed degenerative changes which probably obscured the nucleoli, on the whole, they occupied more of the cell body than did the nuclei of the large lymphocytes.

This case contrasts greatly with Case 3, yet both are manifestations of primary myeloblastic leukæmia. In Case 3 the myeloblastic process involved mainly the spleen and glands—as evidenced by their enlargement—and left the erythroblastic tissue of the bone-marrow comparatively untouched, as evidenced by the small reduction in the red cells. In Case 6 the tissue most involved was the more vulnerable bone-marrow with a resulting severe anæmia and an incapacity to recover from any hæmorrhages.

The cause of death in Case 3 was probably renal obstruction, not bone-marrow exhaustion, and the initial prognosis was therefore theoretically better, it is conceivable that if the hæmorrhages could have been arrested the patient might have settled down to a more chronic type of disease.

CASE 7

Date in 1926	Hæmoglobin	Red cells	Colour index	Leucocytes	Polymorphs	Lymphocytes	Mononuclears	Eosinophils	Red cells	Remarks
June 20th	82	4,560,000	0.9	32,900	4.6	95.0	0.4	Nil	Nil abnormal	Predominant large lymphocyte. Occasional questionable myeloblast present
,, 22nd	84	4,960,000	0.86	32,200	7.6	89.6	2.4	0.4	,,	—
,, 22nd	—	—	—	—	6.0	91.6	2.0	0.4	—	By Lambright's oxidase stain
July 5th	77	4,920,000	0.79	29,000	12.0	83.6	3.7	Nil	Nil abnormal	Mast cells (0.7 per cent.)
,, 31st	84	5,270,000	0.8	9,400	18.3	77.0	4.0	0.7	,,	—

CASE 6. *Acute Myeloblastic Leukæmia.*—A man, aged 26, was admitted on March 4th, 1926, to the Cheltenham General Hospital under Dr. J. Allman Powell. The first symptom, epistaxis, had appeared two weeks before his death.

History.—The patient had been in good health and followed his occupation (clerk) until at 3 A.M. his nose began to bleed. At the Cheltenham Eye, Ear and Throat Hospital the bleeding was traced to two dilated venules on the nasal septum, but despite all possible measures, blood continued to ooze from the nose thus adding to the already extreme anæmia. Seven days later he developed a right-sided tonsillitis with a temperature of 103°, and was then transferred to the General Hospital. He was extremely pale, no gross abnormality was present in the thorax or abdomen, and the spleen was not enlarged. There were a few shotty glands in the inguinal region and one external to the inflamed right tonsil. A blood examination three days after admission showed hæmoglobin, 13 per cent. (approximately), red cells, 730,000, leucocytes, 9440, polymorphs, 4.7 per cent., myeloblasts, 70.3 per cent., myelocytes, 7.0 per cent., promyelocytes, 0.3 per cent., lymphocytes, 17.4 per cent. mononuclears, 3 per cent., 2.3 megaloblasts and 2.7 normoblasts per 100 leucocytes. Marked anisocytosis.

The myeloblasts bore the usual close resemblance to large lymphocytes, and nucleoli were not evident in many of them, but their identity was easily confirmed by Lambright's stain, which showed 83.2 per cent. of leucocytes contained oxidase granules—a figure remarkably close to the 82.3 obtained for "true bone-marrow cells" in the Leishman-stained film.

Death occurred the next day. There was no epistaxis during the last few days of life, but the patient frequently vomited blood—mostly black, occasionally small amounts of red blood.

Post-mortem of the abdominal viscera showed no enlargement of glands or spleen, there was extreme pallor of the viscera especially the kidneys, but sections of the latter showed *no* infiltration with myeloblasts. The stomach contained "coffee ground material."

We would emphasise the definite assistance given by Lambright's stain. On comparing the myeloblasts with the large lymphocytes of Cases 4 and 5, the former showed a smaller average size and a much less clear and darker staining cell cytoplasm with no azur granules. The myeloblastic nuclei were variable in shape—round, oval, reniform, and sometimes

CASE 7. *Glandular Fever.*—A married woman, aged 20, with one child came under the care of Dr. A. F. R. Conder on May 24th, 1926, complaining of sore-throat. Both tonsils were enlarged and reddened and small discrete glands were present in the neck. While under treatment for the sore throat she developed a pale, measly rash on the abdomen, chest, and back, and some readily palpable occipital glands. She felt perfectly well. On June 15th her temperature was 99.4° F., pulse 80. The following day there was no change, but on the 17th she felt ill, her evening temperature was 103° and she was perspiring freely, 24 hours later the glandular swellings had increased, some being as large as hazel nuts. Her temperature was 103°, pulse 116. A blood examination performed on June 19th showed leucocytes, 22,900, polymorphonuclears, 10.8, lymphocytes, 78.8, large mononuclears, 10.0, eosinophils, 0.4, no nucleated red cells, no poikilocytosis or anisocytosis, blood-platelets numerous, all grades from small to large lymphocytes present, the latter predominating. The blood picture suggested leukæmia, but in view of the absence of any indications of red cell destruction, a definite diagnosis was not made pending further examinations. On June 20th the rash had disappeared, leaving deep staining all over the abdomen. The patient's condition was distinctly worse, she was very weak and almost unable to sit up in bed, she vomited twice and complained of abdominal pain. There was no further enlargement of the cervical glands, but the axillary and left inguinal glands were easily palpable. There was no enlargement of the liver or spleen. (See table for blood count.)

The next day there was slight improvement in the general condition and a further blood count was performed. Dr. Letheby Tidy saw the patient on June 23rd and made a diagnosis of glandular fever, in view of the steady improvement in the general condition and the absence of changes in the red cells. By June 30th the patient was much better. The evening temperature was only a little above normal but nocturnal perspiration was still present and the spleen easily palpable. By July 5th the patient was well enough to get out of bed. The spleen could no longer be felt, but the liver projected 1½ inches below the ribs. A blood count was performed. On July 31st the patient expressed herself as quite recovered, another blood count was performed.

The clinical features of this case which tended to simulate acute lymphatic leukæmia, were fever, malaise, and rapid enlargement of glands and spleen, the difference was the absence of hæmorrhages. The hæmatological finding common to the two diseases

The following are certain results from my patients:—

Kar.	Ethereal sulphates in 24 hours urine	0·26
Ts.		0·24
Zach.		0·41
Proc		0·87
Pan.		0·60
Ko's.		0·58
Pap		0·50

This slight excess of sulphoconjugation which means excess of production of aromatic products, cannot be attributed to intestinal putrefactions because my patients did not show any clinical or coprological sign of abnormal intestinal digestion, but may be attributed either to a certain loss in chondroitin sulphuric acid, which is an important constituent of cartilage, or to an abnormal protein metabolism. Although the question is very much discussed, we have the authority of Folin for admitting that aromatic products, except indol, are not only derived from intestinal putrefactions or from putrefactions of proteins in a focus of abscess or gangrene but that they may also be derived from an abnormal protein metabolism. In one patient the quantity of ethereal sulphates decreased distinctly after treatment with colloidal sulphur, and this coincided with a complete recovery.

General Conclusions.

In arthritis deformans sulphur oxidation is not disturbed, sulphoconjugation is in some cases slightly increased, but there is a definite inefficiency of thiopexy. In the light of these researches we can consider that the external causes of rheumatoid arthritis—microbes toxins, or even physical conditions, such as dampness—act first on certain regulators of metabolism and principally of sulphur metabolism, regulators which are more or less predisposed. As a result of the involvement of these organs metabolic troubles and especially sulphur metabolic troubles are elicited, and it is probable that the articular lesions are the ultimate result of these metabolic troubles.

The results of sulphur treatment demonstrated by clinical experience corroborate that conception, and I have myself seen in some patients an improvement of the thiopexic function under the influence of colloidal sulphur treatment.

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(WITH COLOURED PLATE)

ON Jan 14th, 1927, I read a paper before the Ophthalmological Section of the Royal Society of Medicine on Retinal Petechiasis. In that communication I drew attention to a type of hæmorrhage in the retina causing blindness the precise nature of which had not hitherto been recognised, and in consequence its treatment had not been conducted on proper lines. The lamentable result of this incorrect diagnosis and treatment is that a number of patients are condemned to a state of blindness from which they could have been saved I gave to this state the name retinal petechiasis and I showed that the extravasated blood had exuded from unruptured vessel walls.

The circulatory disturbances in the retina have hitherto been classified under two headings, to which I now add a third, as follows:—

1. Retinal hæmorrhage, due to rupture of the vessel walls which occurs in elderly people whose blood-vessels show marked degenerative changes and whose blood pressures (particularly the diastolic) are almost invariably high. It is recognised that little or no treatment can benefit this condition.

2. Retinal thrombosis which leads to destruction of retinal tissue by hæmorrhagic extravasation, and which is also associated with blood vascular degenerative changes: treatment in this state also is of little avail.

3 There is, however, the third type which I am confident should be isolated as definite clinical entity, and for which I suggested the name of retinal petechiasis. (1) The clinical history and definite ophthalmological appearances; (2) the prognosis; and (3) the response to treatment of retinal petechiasis are all three sharply defined from those of retinal hæmorrhage.

The difference between the clinical history of retinal petechiasis and that of hæmorrhage is striking My experience shows that the high blood pressure which accompanies retinal hæmorrhage is not a factor in retinal petechiasis Retinal petechiasis may occur at any time from middle age onwards The youngest patient in my series was a female aged 40 years and it may occur in advanced age. The age of a patient should be no deterrent to investigation and treatment. Two of my cases amply illustrate this important point. The age of the one was 80 and the age of the other was 83, the former patient after treatment, but not before, was able to read the type of an ordinary novel, and the vision of the latter improved to 6/12 part and Sn. 4. Both these patients were referred to me by their ophthalmic surgeons as having very poor vision. Again, in retinal hæmorrhage there are signs elsewhere of vascular degeneration but in petechiasis there may be no such evidence. The urine in my cases of retinal petechiasis, with one exception, showed no abnormality, and there was no case where polyuria was a symptom.

Pathology.

From a pathological view it is not a true retinal hæmorrhage, but differs from it in several important respects. In retinal petechiasis the blood-vessel wall is not ruptured and blood is only exuded from a vessel with intact walls. This is well seen in the coloured plate (Figs. 1, 2, 3) where intact blood-vessels can be seen traversing the exudate.

The distinction I make between retinal petechiasis and retinal hæmorrhage may be compared to the rusty sputum of pneumonia and to the hæmaturia in exists in our cells and plays a very important rôle in all processes of oxidation and reduction.

It seems, therefore, interesting to study in the course of various morbid conditions troubles of sulphur metabolism, and I think that this study will give especially good results in rheumatoid arthritis in which sulphur treatment has been clinically demonstrated as very effective

The Normal Processes of Sulphur Metabolism.

We can distinguish three phases in the normal sulphur metabolism In the first phase, sulphur is dislocated from its protein compound under the form of imperfectly oxidised or neutral sulphur (cystine, cysteine, oxyproteic acid, &c) About 20 per cent of this neutral sulphur is not subjected to any further modification and is eliminated as such with the urine, and to a small extent with the fæces.

The greatest part of the neutral sulphur enters into a second metabolic phase and is thus subjected to a further modification, the oxidation It is thus transformed into completely oxidised sulphur, that is sulphuric acid which combines with certain alkaline bases and is eliminated with the urine in the form of mineral sulphates

A small portion of the completely oxidised sulphur is not eliminated under the form of mineral sulphates, but enters into a third metabolic phase, that of sulphoconjugation It combines with certain toxic products derived either from putrefaction or, in general, from an abnormal metabolism of proteins, and, thanks to that combination, renders these products non-toxic By combining with the so-called aromatic products derived from putrefaction of proteins in the intestine or from protein destruction in a focus of suppuration in the body or even from an abnormal metabolism of food and cellular proteins, it transforms these toxic aromatic products into non-toxic ethereal sulphates which are eliminated with the urine, and, by combining with the cyanates—also products of protein catabolism—it transforms them into the less toxic compounds sulfocyanates (L C Maillard admits that this sulfoconjugation occurs before the phase of sulphur oxidation)

This general metabolic progression is the same for the exogenous as well as for the endogenous sulphur-containing proteins, except for the fact that endogenous sulphur proteins stop for the greatest part in the phase of neutral sulphur Normally, in the adult, there is a perfect sulphur equilibrium. Sulphur catabolised and eliminated on account of the normal wear and tear of our cells is replaced by exogenous sulphur. The name of Thiopexy is given to that special metabolic function of the organism through which the sulphur equilibrium is maintained. Thiopexy, sulphur oxidation, and sulphur conjugation, are the three metabolic functions of the organism regarding the sulphur The organs which regulate this sulphur metabolism are not well known, but it is very probable —as Prof Albert Robin and Prof Loeper of Paris admit—that the liver plays a great rôle Certain incomplete experimental data show also the influence of the thyroid

Thiopexy in Arthritis Deformans

The ideal method for the study of the function of thiopexy would consist in determining the quantity of sulphur contained in the ingesta and the quantity of sulphur excreted with the urine and the fæces, and to find out if there is an equilibrium, a *positive or* a negative balance

We have adopted a more simple but more clinical method In patients submitted to a fixed diet containing 1 g of protein per kilo of weight of the patient, we determine the total sulphur by the Salkowski method, and the total nitrogen by the Kjehldal technique The ratio total sulphur total nitrogen indicates the condition of the function of thiopexy. It may be called the thiopexy index. Normally, under such conditions, an adult excretes about 2 50 of total SO_3 and the ratio total sulphur to total nitrogen is about 1 · 7 up to 1 . 10. If in that ratio the sulphur element is increased, it means that there is an increased catabolism of the sulphur-containing proteins, a loss of sulphur, or in other words a deficient thiopexy. We cannot take into consideration the cases in which the total sulphur excretion is increased, but the ratio total sulphur total nitrogen remains normal Under these circumstances, we have to do, perhaps, with a general increased catabolism of protein, but not with a special increased catabolism of sulphur-containing proteins

The greatest difficulty in the interpretation of this sulphur nitrogen coefficient arises because various authors do not agree as to its average normal value This disagreement is due to differences in technique, not only concerning the chemical analysis but concerning also the diet to which the patient is submitted That is why we have taken into consideration only extreme variations from the normal average. Even if we consider only these great variations, we find in rheumatoid arthritis an increase of sulphur catabolism, that is a deficient thiopexic function Among various determinations, (*made by the Salkowski* method) I give the following examples —

Kar	Total urine SO_3 of 24 hours	3 12	ratio S/N	1 3
Proc		3 50	,,	1 3
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Bearing in mind Folin's criticism on the interpretation of this sulphur oxidation coefficient and the fact that in my determinations I have not found great variations from the highest limits of the normal standard, I think we cannot conclude to any definite trouble of sulfo-oxidation in arthritis deformans These conclusions correct those I gave in my preliminary note two years ago when I had only a small number of determinations and had not taken into consideration the works of Folin on this subject

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The diagnosis of sulphoconjugation is made by determining the quantity of ethereal sulphates in the 24 hours urine. My determinations were made by the Salkowski method Here also we find divergent opinions as to the normal standard C Tollen finds an average of 0 18 of ethereal sulphates SO_3 in 24 hours urine We can *consider as slightly abnormal* the quantities above 0 40 and as definitely abnormal the quantities above 0 60 In most cases—but not in all—of arthritis deformans the excretion of ethereal sulphates is slightly above the normal standard

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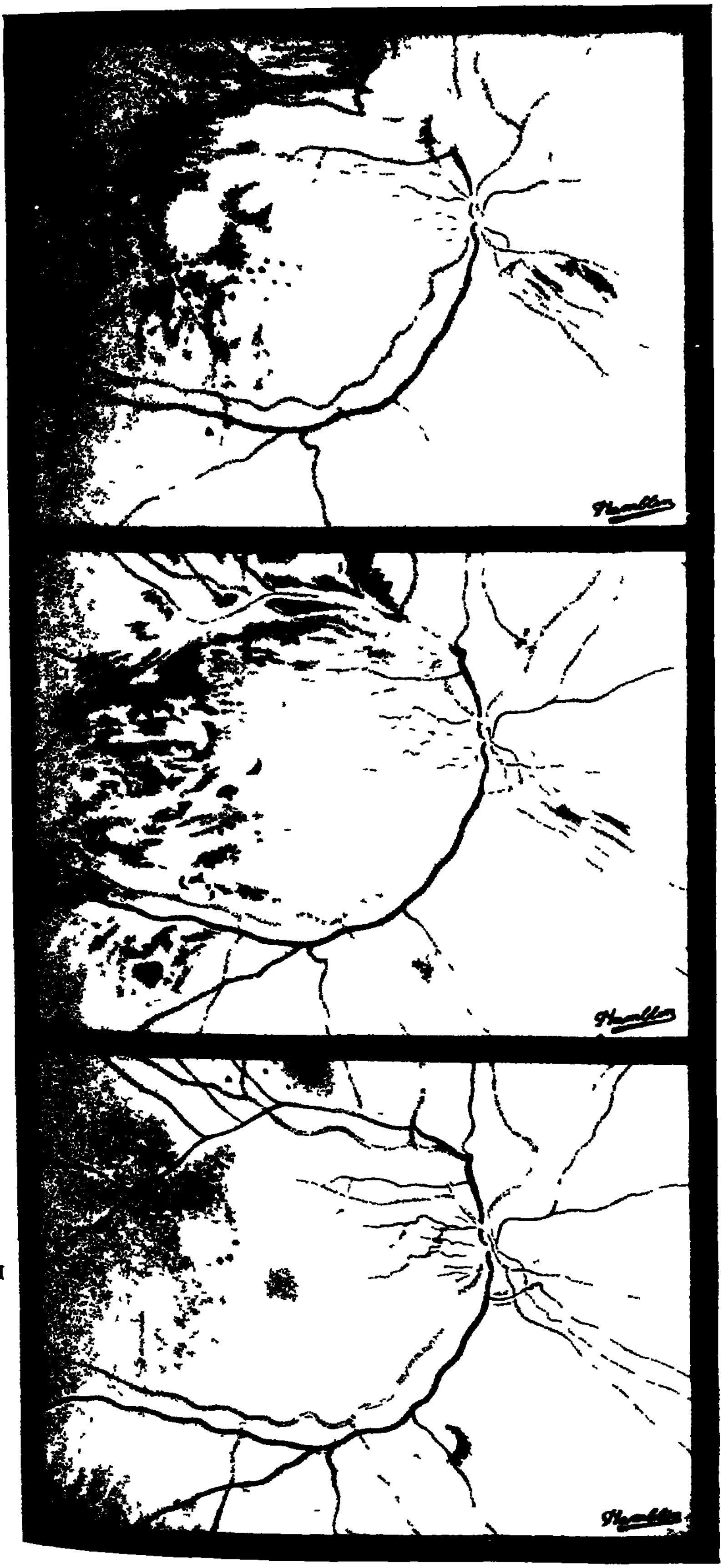
Sulphoconjugation in Arthritis Deformans

The diagnosis of sulphoconjugation is made by determining the quantity of ethereal sulphates in the 24 hours urine My determinations were made by the Salkowski method Here also we find divergent opinions as to the normal standard C Tollen finds an average of 0 18 of ethereal sulphates SO_3 in 24 hours urine We can consider as slightly abnormal the quantities above 0 40 and as definitely abnormal the quantities above 0 60 In most cases—but not in all—of arthritis deformans the excretion of ethereal sulphates is slightly above the normal standard



THESE figures illustrate a typical case of retinal petechiasis

The patient was a man, aged 49, who a month previously had suddenly lost the sight of the right eye The case was referred to me with the report of a hæmorrhage in the region of the macula of the right eye with a cloudy vitreous vision 6/60 My general examination showed a normal cardiovascular system, a B P 148–86, no albumin or polyuria, a very septic mouth with pus from two stumps of lower wisdoms which had been left two years ago after an attempt at their extraction had been abandoned There was also a very septic but intact upper left molar and two very septic tonsils

FIG I is an exact drawing of the state of the retina at this time. Note (1) the exudates in the region of the macula and due south of the disc, (2) the vessels running north-west of the disc passing through the exudate, and (3) the linear splashes due east of the disc.

The teeth were at once extracted

FIG II depicts the same area three weeks later, fresh splashes had occurred, although the vision had improved to 6/36 It was then decided to enucleate the tonsils Three weeks after this operation was performed the vitreous was clear, the splashes had almost entirely disappeared, and vision was 6/9 Sn. 4.

FIG III depicts the same area nearly two months after enucleation of the tonsils The vitreous was clear and vision 6/6 and Sn 1 c. glasses The exudate has almost completely disappeared

In comparing the states of blood-vessels in Figs I, II, and III., the vessels can be seen passing through the exudate blood In Fig. III the vessel wall is intact, although there is still some exudate around it, showing that the vessel has not ruptured

DR. H. MORELAND McCREA. RETINAL PETECHIASIS.

acute nephritis Although blood appears in the sputum and urine, respectively, it has escaped from the blood-vessels by exudation and not by rupture of the walls When walking along the banks of a brimming stream one can often notice little patches of well-grown grass in ground so sodden with moisture that water oozes out with the pressure of every footstep The stream has not burst its banks; its water has exuded into the neighbouring soil

Retinal petechiasis is produced in an analogous way There is an exudation of blood without rupture of a blood-vessel, and it is a process that has quite a different pathology and significance to retinal hæmorrhage that is a result of rupture of a blood-vessel wall It is impossible to speak dogmatically of the pathology of retinal petechiasis because so far as I know no opportunity for pathological examination has been possible other than that afforded by ophthalmoscopic means, which show definite and characteristic appearances

In a well-marked case the retina appears bespattered with blood-stained mud (see Figs 1 and 2) In severe cases these splashes may be confluent and the vitreous may be cloudy The appearance then looks as if it were a true hæmorrhage In severe and mild cases *alike, however, these splashes have no relationship to* ruptured blood-vessels, and in Figs 2 and 3 intact blood-vessels may be seen to traverse the exudation

Keogh, of Copenhagen, has shown that "when the capillary walls are subjected to stimulation the response may be in the nature of a contraction or relaxation and also that with relaxation they may become increasingly permeable to the constituents of the blood plasma until when fully dilated they fail altogether to retain them Toxins circulating in the blood can act as stimulus to produce this relaxation" It is my belief that splashes in retinal petechiasis are produced in this way That similar lesions may occur elsewhere in the body from a similar causation is a necessary corollary, and this matter will be discussed later

If the assumption is correct that retinal petechiasis can be produced in this way one should be able first, to discover sources of infection, second, one should be able to remedy retinal petechiasis by the removal of these sources, third, a recurrence of the septic trouble should give rise to fresh manifestations in the retina, and fourth, similar lesions which can be seen elsewhere than in the retina and where direct visibility is also possible, the urinary bladder for example, these should also be subject to the above conditions

Clinical Conditions.

I will now proceed to adduce clinical instances which fulfil these conditions

(1) *Sources of Infection*—Fifteen cases have been reported by me in full and in all of them a definite focus of infection was discovered, and in some two or more foci were detected Concerning the site of these focal infections the teeth, the tonsils, the accessory sinuses of the nasal cavities, the ethmoid, and the urinary tract have been discovered in my cases, either respectively or collectively to be responsible for retinal petechiasis

Good and rapid results have followed the removal of focal sepsis Infected teeth were extracted, septic tonsils enucleated, and sinuses treated In those cases in which operation was contraindicated, as in sepsis of the urinary tract, vaccines were employed and medicines were given, and the results were eminently satisfactory

(2) Out of the 15 cases marked *improvement in vision* rapidly followed treatment in 10, moderate improvement in 2, no improvement with relapse in 2, and 1 case was not seen again In the case in which improvement was marked the cloudy vitreous became clear very rapidly and within a week there was in most cases a marked improvement in vision, the best improvement being 6/60 to 6/6 and Sn 14 to Sn 1 (It has been suggested that the early rapid improvement is due to the disappearance of œdema in the macular region) It will be agreed that this answers the second condition that the removal of the septic focus arrests petechiasis in the retina

(3) *Recurrence*—The recurrence of splashes in the retina resulting from the recurrence of the original septic trouble is, perhaps, the best proof of my contention In three cases I can supply this necessary evidence In one of them fresh splashes in the retina occurred with a marked deterioration in vision, after an exacerbation of ethmoidal sepsis of long standing and improvement resulted again immediately the sepsis was treated

In the second case, one of tooth sepsis, a recurrence of failing vision led to the re-examination of the patient and the left tonsil was found to be very septic, although throat specialists had formerly passed both tonsils as normal It was impossible to operate in this case; the tonsil was, therefore, treated locally and a vaccine was also administered The improvement was not to the extent one would have hoped, but it was quite definite The third case was first referred to me six years previously for "hæmorrhage" in the right eye and deterioration of vision to 6/60. On examination at that time I failed to detect buried tonsils, as it was not my custom then to retract the anterior pillar of the fauces in order to make a proper examination She returned six months ago with hæmorrhage in the left eye, and then I found by retracting the pillars very septic buried tonsils The vision in this eye was down to 6/60 and the vitreous was cloudy The tonsils were enucleated at once and in four weeks the vision in the left eye was 6/6 c glasses She returned again four months later and the vision again was down to 6/60 and the vitreous was again cloudy A careful search was again made for sepsis No focus was found but a catheter specimen taken by myself with extreme caution showed at the end of 24 hours a heavy growth of streptococcus in pure culture in the urine This case is now under treatment, and has already shown marked improvement. These recurrences are distressing but serve to prove my contention, and they point to the advisability of keeping a watchful eye on cases supposed to be cured

(4) *Similar lesions* elsewhere in the body I am not in a position to supply evidence in support of the fourth condition—namely, that similar states should be found elsewhere in the body as a result of similar pathological conditions However, Kidd has found and reported on a case of a similar state in the bladder to which reference will later be made

I have said enough to prove that retinal petechiasis is an important clinical entity which should occupy a position of its own and should not be classified any longer under the heading of retinal hæmorrhage The reason prompting me to prove that retinal petechiasis is a clinical entity is that in my opinion a type of blindness due to this pathological condition exists and is curable, but so long as it remains amongst the group of hæmorrhages of the retina it must unfortunately remain amongst the class of incurables.

THE POSSIBILITY OF A HÆMORRHAGIC STATE ELSEWHERE BEING A CONDITION SIMILAR TO RETINAL PETECHIASIS

While writing this paper concerning petechiasis as it appears in the retina I was aware that it may also be occurring at the same time, either with or without retinal changes, in other internal or external surfaces of the body, and that the retinal changes might be only a local expression of a state of affairs which probably had a wider distribution

There is no doubt that the careful study of this state opens up an entirely new vista and leads one into a new realm of possibilities in diagnosis and treatment of certain states elsewhere in the body where hæmorrhage occurs Kidd touched on the subject as far back as 1913 in a contribution to the *Annals of Surgery* entitled Purpura of the Bladder The case described by him was one of hæmaturia which he considered was due to purpura of the bladder, secondary to a bacterial infection of the tonsil The appearance of the bladder by cystoscopic examination, while the hæmaturia persisted, he described as follows —

> "The bladder wall for the greater part appeared pale and healthy, but scattered irregularly over fundus and trigone were seen patches of submucous hæmorrhages varying in size from a pin's head to a sixpence The patches were of all shapes and sizes, some linear, some stellate The greater number were scattered over the fundus There was no ulceration "

A fortnight later, after the hæmaturia had ceased, cystoscopic examination revealed no evidence of hæmorrhage in the mucous membrane of the bladder There is a striking similarity in the appearances at the first examination of the bladder to those described by me in the retina (see Figs 1, 2) The similarity of their disappearance is also complete The fact that Kidd has found a state in the bladder similar to that I have described in the retina and that he considers it to be due to a precisely similar cause —namely, a septic focus elsewhere in the body—opens up an important field of inquiry. Here are two situations in the body where it is possible to observe vessels and to watch their pathological changes and in both places petechiasis has been described by different observers, causing in one the splashes in the retina associated with cloudiness in the vitreous and in the other a similar lesion in the bladder mucosa with hæmaturia

I believe it is true that the retinal changes I have described and also the changes in the bladder described by Kidd are due to the presence of a septic focus elsewhere in the body If this be so, then the larger proposition is also highly probable, that many hæmorrhages from other mucous membranes of the body may also be due to petechiasis from the same causes—namely, septic foci elsewhere in the body For example, not infrequently operations are performed on the abdomen for hæmatemesis or melæna in the belief that ulcers of the stomach or duodenum will be demonstrated, yet none have been discovered

Two cases occurring in my own experience illustrate this point They had symptoms of duodenal trouble with melæna In the first, at the operation small petechial hæmorrhages were visible in the second part of the duodenum without definite evidence of ulceration; in the second, a similar state was found by the surgeon who was satisfied there was also a thickening in the first part of the duodenum which he considered to be an ulcer Some time later old chronic septic antra in the first case and very septic tonsils in the second were dealt with They are now quite well, but the cure of their digestive trouble was completed only after the removal of the septic foci If septic foci had been discovered and treated earlier in these cases the hæmorrhages might have been cured without the performance of abdominal operations

Further, it is conceivable that blood corpuscles which have exuded from a capillary may be so great in proportion that they may rupture the continuity of an epithelial surface or render its nutrition so feeble that gastric duodenal or intestinal secretions may act upon it and produce ulceration Therefore my observations in the retina in conjunction with Kidd's observations on the bladder bear upon gastric duodenal and intestinal dystrophies in the two following remarkable ways

(1) Hæmatemesis and melæna may be caused simply by petechiasis in the mucous membrane of these parts due to septic foci elsewhere in the body

(2) Petechiasis may end in actual ulceration in the stomach, duodenum, and intestine Consequently it is of the utmost importance in any of the above events to seek and cure a septic focus before excising or operating upon viscera in cases of hæmatemesis, melæna, or hæmaturia Further, it is possible that metrorrhagia or menorrhagia may again be examples of petechiasis due to a septic focus elsewhere in the body

THE ALLERGEN-PROOF CHAMBER IN THE TREATMENT OF BRONCHIAL ASTHMA AND OTHER RESPIRATORY DISEASES

By W STORM VAN LEEUWEN,
W EINTHOVEN, JUN, AND W KREMER

(From the Pharmaco-Therapeutic Institute of the University of Leiden, Holland)

IT is generally acknowledged that almost all cases of bronchial asthma and urticaria belong to the so-called allergic group of diseases, that is to say, the attacks are caused by inhalation or ingestion of substances called allergens—e g, horse-dandruff and other so-called animal proteins, various pollens, and particular kinds of food If the causal agent of the attacks is known, specific therapy may be applied by injection of small quantities of solutions of the allergen In many cases, however, it is impossible to implicate one particular allergen as the causal agent, and non-specific treatment has therefore to be tried

In an article published in THE LANCET in 1921 [1] it was suggested that in allergic diseases the use of tuberculin was the most valuable form of non-specific treatment We have now treated over 500 cases by this method, and our results are as follows · cured, 50 per cent, improved, 30 per cent; failures, 20 per cent These results are valuable, but not satisfactory, it is noteworthy that nearly all investigators who publish statistics on the treatment of allergic diseases estimate their failures at about 20 per cent

Work done during 1923 and 1924 [2] showed us that our failure to achieve more than 50 per cent of complete cures was almost entirely due to the fact that factors of climate played such an important part in these cases We realised that if it were possible to bring all these patients to a high mountain climate and keep them there permanently the problem of treatment would be practically solved Other investigations showed us that the influence of a high mountain climate on allergics is almost entirely due to the relative absence of allergens in the atmosphere The allergens occurring in the air of lower countries we called *climatic allergens*

Since it is impossible to send all asthmatics to high altitudes and keep them there we considered the possibility of making such arrangements in patients' homes that they should be free there from contact with climatic allergens This problem has been studied during the last two years, and we can now state that it has been practically solved Allergen-proof rooms are now used by a number of patients in our country The system worked out by us is so simple and gives such good results that it will probably open up new ways of treating allergic and other diseases Of course this does not mean that the older methods of anti-allergic treatment—including the use of tuberculin—have become useless, on the contrary, they are still of great importance as additional measures But in pure cases of climatic allergy the allergen-proof chamber has become the principal means of treatment

Two Groups of Climatic Allergens

Before describing the new therapeutic method we must first refer to a point which formerly puzzled us considerably, but proved to be a useful starting-point for further work Every physician knows that many asthmatics are better in some places and worse in others, and also that many patients are free from attacks of asthma as soon as they are taken into hospital, even if the hospital is in the very town in which they live The improvement which takes place at the hospital is not due to food, rest, or drugs, for

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[1] W S van Leeuwen and H Varekamp On the Tuberculin Treatment of Bronchial Asthma and Hay Fever, THE LANCET, 1921 ii, 1366

[2] W S van Leeuwen, Proc Roy Soc of Med (Sect Therap and Pharm), 1924, xvii 19

allergens Furthermore, our observations proved that conditions similar to those in high mountain air may be produced by artificial means in Holland or any other country In this connexion it is noteworthy that our clinic is situated on clay soil in a moist region, which is naturally considered bad for asthmatics

Of course those patients who improved during residence in the clinic were not cured of their asthma As a matter of fact, most of them had attacks again as soon as they went home In this respect, too, the effect of the allergen-proof chamber is similar to the effect of high mountain air This being so, it may be asked why we took these patients into the clinic at all It was done, first, to make a correct diagnosis and to observe whether the case was a "pure" case of climatic asthma, secondly, to determine whether other sensitisations—to products of animal skin or foodstuffs—were present, and, thirdly, to start anti-allergic treatment with small doses of extract of climatic allergens and to determine the efficient dose for treatment Apart from this, admission to the clinic is of great value, since we can advise those patients who belong to the 75 per cent of purely climatic cases to build an allergen-proof chamber in their own homes, or, if this is financially impossible, we may at least instruct them how to change conditions at home by looking after furniture, mattresses, blankets, and the like

Allergen-proof chambers have been installed by a Dutch and a German firm in 45 private houses and have in almost all cases given complete satisfaction The application of the system to private houses is possible as there are two favourable circumstances which have to be mentioned First, it has turned out that climatic allergens of Type A—i e, allergens occurring in the outside air—are of much less importance than those which occur and are formed in the houses, and consequently the simple type of allergen-free chamber is for the most part sufficient, very few patients needing the much more complicated and expensive type which arranges for purification of outside air Secondly, it has proved that even patients highly sensitive to climatic allergens can stand a certain amount of allergen, so that it is not necessary for them to stay in their allergen-proof chamber day and night, and it suffices if they sleep in their chamber and stay in it some hours daily In the daytime they may go out and attend to their work Of course, there are some exceptions in which the cause of asthma is to be found precisely in the place where the work is done, but by this method we have been able to treat successfully cases which have absolutely resisted all other forms of treatment It goes without saying that for safety's sake we give anti-allergic treatment also to those patients who have a chamber at home and try to desensitise them gradually with injections of small amounts of climatic allergens

Whooping-cough and Tuberculosis

Recently we have applied the principle of treatment in allergen-proof chamber to two other illnesses—whooping-cough and tuberculosis Only five cases of whooping-cough have been treated, but the results were so striking as to justify publication, the more so as probably we will not be able to extend our observations in this direction in the near future All our whooping-cough cases came into the clinic during or before the height of the illness, they had violent attacks at least every two hours These violent attacks ceased from the moment they entered the allergen-proof chamber (ventilated with purified air) We did not notice any severe attack with cyanosis, although some attacks, eight at most of a very mild degree of severity, occurred during the first few days After four to seven days the children were free from cough We do not know the explanation of this sudden improvement, but simply report the facts as they may be of theoretical and practical interest

Sixteen patients with tuberculosis of the lungs were admitted to the clinic and kept in allergen-proof chambers They were pure cases of severe tuberculosis with symptoms and clinical signs of the disease confirmed by radiographic examinations In the seven who had sputum examination showed numerous tubercle bacilli Three patients remained uninfluenced by residence in the allergen-proof chamber, but all the others improved In two very severe cases the improvement was only temporary, they could not be saved and died after half a year and a year Improvement was shown very soon after admission to the clinic and consisted of more ease in breathing, much less coughing, improvement in appetite, increase in weight (3 to 15 kg), lowering of bodily temperature, and in some cases reduction in the amount of sputum In three cases with distinct cavities the reduction in the amount of sputum was very marked The ultimate results of the treatment of pulmonary tuberculosis in allergen-proof chambers cannot yet be judged We only want to emphasise that the first result of admission to allergen-free air in 13 out of 16 cases of severe tuberculosis of the lungs was a distinct improvement, so that the conclusion is permissible that also in this respect the advantage of high mountain air may be obtained in low countries by artificial means The lack of ultra-violet rays in our allergen-proof chambers may, of course, easily be made good by the use of quartz lamps

Clinical and Laboratory Notes.

FOUR CASES OF TETANUS FOLLOWING INTRAMUSCULAR INJECTION OF QUININE.

By John Macqueen, M B, Ch B Edin,
SENIOR MEDICAL OFFICER, DEPT OF HEALTH, PALESTINE

In September and December, 1925, four persons died in Haifa from tetanus following intramuscular injection of a solution of quinine bihydrochloride into the buttocks They were all adult males The following are notes of the cases —

Case 1—The patient received injections of 1 g quinine bihydrochloride on Sept 15th and 16th On the same day five other patients had injections of the same solution, two of them were alive and well in January, 1926, and the other three had gone to Transjordania and could not be traced After the injections the patient received dental treatment and suffered from bleeding piles Symptoms of tetanus set in about Sept 27th, 11–12 days after the last injection, and the patient died on Sept 30th No wound was discovered

Case 2—Injections of 1 g were given on Nov 3rd, 4th, and 5th Symptoms began about 28 days later, and the patient died after an illness of 2–3 days on Dec 5th He died out of hospital, but so far as is known there was no wound except that of the injection

Case 3—The symptoms came on 28 days after the last of three injections on Nov 4th, 5th, and 6th The illness lasted 24 hours and the patient died in hospital There was a history of an ingrowing toe-nail which he used to pare No wound was discovered Between Nov 3rd and 6th two other patients received injections (also of 1 g), with the same series of needles (reboiled) and with the same quinine solution, possibly from a different bottle Both were alive and well in January, 1926

Case 4—The fourth patient received his injections on Nov 11th, 12th, and 13th Definite symptoms of tetanus were first noted on Dec 4th, 21 days after quinine was last given, and the patient died in hospital on Dec 7th No wound other than that of the injection could be discovered Between Nov 6th and 13th nine other patients were given injections from the same solution All were alive and well, so far as we knew, in January, 1926, most of them were seen

The quinine solution for the injections in September (Case 1) was prepared before Sept 5th That used during November was made up during October

Method of Preparation—Vaccine bottles (25 c cm) are well washed and rinsed with alcohol The quantity of quinine bihydrochloride required is measured out and placed in a glass measure and distilled water is added to make a 50 per cent solution The solution is filtered and poured into several vaccine bottles These are rubber-capped and sterilised in an autoclave at 15 lb and 120° C for half an hour They are stored in a poison cupboard and a new lot is prepared about every six weeks.

it occurs if the patient is out of bed all day, goes home, and does his work—provided only that he *sleeps* at the hospital.

We have come to the conclusion that two kinds of climate-allergens must be distinguished Probably it will be shown in a few years that allergens of these two groups are of a common nature, but for the present we draw a line between two groups, which we call A and B Group A contains allergens which occur in the outside air, for example, the presence of such allergens in Bristol may induce attacks in a man who is free from asthma in London The nature of allergens of Group A is unknown, although we have been able to prove their existence beyond any doubt Group B contains allergens which occur and are formed in private houses They are absent, or almost absent, in well-organised hospitals Various workers have found examples of such allergens—e g, house dust, grain contaminated with small insects (mites), unknown substances in certain feathers used in pillows, bedding infected—as often happens in private houses, but seldom in hospitals—with fungi, especially *Aspergillus fumigatus*

Most patients are very sensitive to allergens of *Group B, and they are practically* free from attacks if protected from them Protection may be obtained by building in their bedroom a small airtight chamber (Type I) described below A small number of patients are also sensitive to allergens of Group A to such an extent that the chamber of Type I., which only excludes allergens of Group B, is not sufficient; they must be put into a chamber of Type II.

Description of the Chambers

By Prof VAN LEEUWEN and Mr EINTHOVEN.

TYPE I. is an airtight chamber, built of iron or any other material on which bacteria or moulds cannot grow The room must be small—6 × 6 × 9 ft suffices In the front wall of the chamber is a door which shuts tightly, in one of the side walls is a large window, to face the window of the room in which the chamber is to be placed The walls are painted and varnished, so that they may be easily cleaned

The chamber contains an iron bed and an iron chair Mattresses, pillows, and other bedding are ordered fresh from the shop, they are sterilised before entering the chamber and again every two months Before going to bed the patient undresses in his bedroom and then enters the chamber and shuts the door at once; he stays in the chamber during the whole night and he does not take into it any clothes, extra pillows, books, or food The chamber is ventilated by an exhauster which blows in 70 cubic feet of air per minute In one of the side walls is a hole to let the air escape, this hole is connected with an outlet For most purposes it is sufficient if the exhauster draws in air by an iron tube protruding about 30 feet above the roof of the house, in winter, of course, the air must be heated before it enters, and this is easily done by putting some heating system in one of the tubes If zinc tubes are used they must be varnished to avoid the possibility of dust of zinc oxide entering the chamber

TYPE II —The construction of this chamber is the same as of Type I The only difference lies in the methods of purifying the outside air before it enters the chamber Those suggested are as follows —

A *Refrigerator System* —Early in our endeavours to obtain air free from allergens we tried to get rid of the " dust " in the air by means of moisture, and we devised several schemes for the purpose We later found that they were all based on a wrong principle One of the few things we know of the nature of allergens is that they are present in colloidal form and are very easily soluble in water, so that moistening the air or filtering it through moist tissue will never be satisfactory In moist air these water-soluble colloidal particles will always be surrounded by some molecules of water The proper method of getting rid of allergens is to make the air dry by cooling, the water of condensation will then contain a great part of the colloidal material which was previously present in the air Thus the air can be effectively purified by being passed over the cooled surface of a refrigerator before entering the chamber In the clinic for allergic diseases at Leiden there is a refrigerator with a capacity of 4000 calories per hour and a cooling surface of 180 sq. ft This will reduce the dew-point of the outside air by 20° F if about 150 cubic feet of air pass per minute, which suffices to ventilate two chambers of Type II for two patients each The cooled air has to be heated by means of a small central heating system For the most part we obtain a relative humidity of 20 per cent in our chambers, with a room temperature of 65°–70° F, which may be considered sufficient

B *Filters* —One of our first projects was to purify the outside air by means of a filter Cotton filters, which we used at the beginning, proved useless Aided by the kindness of Prof Gray, of Leeds, we tried various other materials, and at last found common asbestos paper to be the most satisfactory We have constructed asbestos filters which have a capacity of 180 cubic feet per minute at a pressure of 25 cm water This pressure may be produced by an *ordinary exhauster driven by an electric motor* Since this filter keeps back tobacco smoke entirely it may be surmised that all colloidal particles of a diameter above 10 μμ are taken away from the outside air It has not been possible so far, however, to put this system on a sound financial basis If a filter has only to free the air from pollen it is unnecessary to use asbestos paper, simpler filters of specially prepared paper being sufficient. They offer very little resistance and in practice they are found useful

C *Electrical Process* —During discussion of the problem of dust-free rooms Prof F G Donnan about three years ago suggested to one of us that we should use the Cottrell process This is based on the following principles —

In the centre of an iron tube (which is connected with the earth) a thin metal thread is placed This thread is connected with a high voltage transformer and rectifier, so that the thread can be charged with about 50,000 volts If air loaded with dust passes through the tube all the dust is thrown to the side of the tube, the air leaves the tube purified

This method has, for clinical purposes, the great drawback that the air leaving the tube contains so much ozone that it cannot be breathed We had to find a device for getting rid of the ozone Dr Nijk succeeded therein by the use of mixtures of various metallic oxides, but this system also, it was found, could not be put on a reasonable economic foundation

Clinical Results.

By Prof VAN LEEUWEN and Dr W. KREMER

More than two years ago a special clinic for the treatment of allergic diseases, based on the principles laid down in the preceding section, was arranged in Leiden For this purpose two private houses were rented, they were damp and rather badly built, and were situated on clay soil in a very moist part of the city In eight rooms of these houses small allergen-free chambers were built and arrangements were made to enable us to ventilate each chamber with outside air or purified outside air

So far about 500 asthmatics have been admitted Of these, about 75 per cent became free from asthmatic symptoms within two or three days, about 15 per cent were distinctly improved after two or three weeks, and 10 per cent remain uninfluenced Some years ago K Turban and L Spengler, in an account of the influence of high mountain air on asthma, stated that at Davos 68 per cent of asthmatics became free from symptoms within two or three days, 25 per cent. were much relieved after two or three weeks, and 7 per cent remained unchanged It is clear, then, that our results are the same as those of the Swiss authors, which affords undeniable evidence for the correctness of our view that the beneficial influence of high altitude on asthma is due to the lack of climatic

Medical Societies.

MEDICAL SOCIETY OF LONDON.

A GENERAL meeting and conversazione of this Society was held on June 13th, Sir HUMPHRY ROLLESTON, the President, in the chair Following the business meeting, the annual oration was delivered by Prof HARVEY CUSHING (Harvard University, U S A)

The PRESIDENT, in a few introductory words, referred to the importance of Prof Cushing's contributions to medical literature, and especially to his work on the surgery of the central nervous system He was outstandingly fitted to the happy definition of the surgeon as a " physician who can use his hands," and he could use his pen with equal facility Everyone must have been charmed by his Life of Sir William Osler, his teacher and friend

Prof HARVEY CUSHING took as the title of his oration

THE SURGICAL ASPECTS OF ACROMEGALY

He said that though the medical man began his professional life with a general training he soon found that there were certain maladies or phenomena of disease which particularly interested him, and which, through force or opportunity or circumstance, engaged his attention It was by progression from the general to the particular that specialisation arose, and though in the process the field might narrow, the point of view might broaden

Those who could go back to the 'nineties would know that the pituitary body was then too inconspicuous an object to attract much attention , if noticed at all it was brushed aside as a vestigial relic of no recognisable importance There were, however, glimmerings of its relationship to the disorder to which Pierre Marie had recently given a baptismal name Once pointed out, this disorder was easily recognised, though for a time it was regarded as a freak of nature which eclipsed understanding, nothing then being known of the function of the pituitary body or of its relation to other glands having an internal secretion How different the aspect now, when the problems of endocrinology were absorbing the attention of a host of investigators, who, almost monthly, were adding to knowledge on the subject

There were certain general principles on which the profession had come to base its conception of the way in which the disorders of the ductless gland affected the body The first of these arose from the presumption that there were counterposed states of primary under-function and of primary over-function for every single member of the so-called endocrine series And it was assumed that these two states, in the case of every gland, would evoke their own peculiar clinical syndromes Some of these, which were already recognised, and some—particularly the deprivation states like myxœdema, diabetes mellitus, eunochoidism, and tetany—could be experimentally produced in animals , the states of glandular over-activity had for the most part proved difficult to reproduce experimentally

Surgery had played no small part in the elaboration of this theory Enlargement of the thyroid was for all to see, and in localities where goitre was endemic the surgeon had primarily been induced to operate upon cases in which life was endangered or made insufferable owing to pressure by the enlarged gland on the trachea These procedures had proved hazardous It had then become evident that a residuum of thyroid tissue must be left, and that the parathyroid glands must be spared if subsequent health, and even life, was to be maintained The pituitary problem however, was far more difficult, and not until skiagraphy was sufficiently perfected to be reliable, had it been possible to tell with any certainty whether that gland was tumefied Its inaccessibility had long kept it out of the way of surgical temptation, and even its experimental removal in animals was difficult and gave contradictory results, largely on account of coincident adjacent lesions of the nerve centres, which possibly presided over the activity of the neurohypophysis

Function of the Pituitary Body

One of the first questions to be raised in regard to acromegaly concerned its likely connexion with pituitary tumours And at last investigators were coming to close quarters with the riddle The physiologists and biochemists had chiefly given attention to the active substance discovered in extracts of the neurohypophysis, the pathologists had had some success in differentiating certain of the hyperplasias and other tumefactions affecting the gland , the morphologists had shown how, in the development of Rathke's pouch, the epithelial *anlage* of certain of the congenital tumours might arise, whilst the experimentalists had laboriously undertaken to determine the secondary effects of removing part or all of the gland.

Early experiments showed that the hypophysis secreted a substance or substances which not only influenced growth, but also had a marked effect upon the activity of the reproductive organs Physiologists had discovered an active principle only in extracts of the posterior lobe of the gland, this principle being a stimulant to growth Menstrual disturbances were common in women who had disease of the pituitary, whatever the nature of that disease might be Prof. H M Evans had shown that fresh extracts of the anterior lobe would not only interrupt œstrus in an adult female rat, but would prevent its onset when it was given to pre-adolescent animals The same worker had found that when intraperitoneal injections of these extracts were continued over a long time the growth of the animals concerned was greatly accelerated, and that gigantism could in this way be experimentally produced T J Putnam had succeeded in doing this, and it had been shown that the pars anterior actually contained a growth-stimulating hormone This important fact would doubtless stimulate the biochemist to search for the chemical principle When this had been finally isolated, the treatment of clinical states of anterior pituitary lobe deficiency would be revolutionised These experiments had not produced acromegaly, but only gigantism, though both these conditions could be ascribed to excessive secretion of the anterior lobe. Prof P E Smith, of Leland Stanford University, had devised an operative procedure whereby hypophyseal or parahypophyseal lesions could be accurately made, with results which were far more dependable than any previously attained, and the possibilities of replacement therapy to atone for this glandular deprivation had been for the first time demonstrated

Prof Cushing had something to say in criticism of some of the terms in current use in relation to hypophyseal disease Did cachexia hypophyseopriva, due to destruction of the gland, really exist? He suggested that such a term as macrosomia might replace acromegaly , it would permit of its reverse condition being spoken of as microsomia

Effects of disordered pituitary function on organs other than the sexual ones had also been investigated. In autopsies on four cases of acromegaly, not only was there splanchomegaly but also hyperplasia of the thyroid and parathyroid Owing to a careful study of the rat and its habits, an immense field had been opened up in relation to pituitary function It was clear that this structure conducted an orchestra, and derived from it harmony or dysharmony overtones or undertones, according to its physiological mood.

Hypopituitarism

Clinical states occurred which suggested that the patient suffered a complete deprivation of pituitary substance It was now occasionally possible to remove the pituitary gland apparently in its entirety, even in the adult It had long been noted in the case of animals that young ones stood the procedure much better than did adults If it was clear in a

Before use the rubber cap is dipped in iodine The needle pierces the cap

Technique of Injection —Injection is made into the gluteal muscles on the outer part of the buttocks The skin is prepared with 3 per cent tincture of iodine Two or three needles are boiled and reboiled between each injection Boiling of syringe and needles is for 15 minutes in the first instance After injection hot fomentations are used

There are certain points of interest in connexion with these cases The incubation periods were long in two cases 27 to 28 days, in one 21, and in one 11–12 The illnesses, on the other hand, were unusually severe The time between onset of symptoms and death was in no case more than 72 hours

The conclusion was reached that the infecting spores were in all four cases introduced at injection There did not appear to have been any obvious defect in the manner of preparation of the skin, the technique of injection, the sterilisation of syringe and needles, or the preparation and sterilisation of the solution Similar methods had been employed for a considerable time and were used in military hospitals during the war The cases remind us that quinine solution causes necrosis of muscle-tissue and that necrosed tissue shut off in this way from the air may form an ideal nursery for tetanus spores if they happen to gain entrance It is not easy to maintain a technique which will exclude all possibility of introducing them They provide a further argument in favour of the oral as compared with the intramuscular route for the administration of quinine whenever possible

The subject is dealt with by Sir D Semple in Memoir No 43 (New Series) of the Series of Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India, published at the Government Printing Press, Calcutta, in 1911, and entitled "The Relation of Tetanus to the Hypodermic or Intramuscular Injection of Quinine"

A CASE OF
AURICULAR FIBRILLATION
OF FIFTEEN YEARS' DURATION

BY E E LASLETT, B SC LOND, M D MANCH

THE following case seems worthy of record

Mrs K first came under my care in July, 1910 She was then 48 and had five children She had had rheumatic fever 20 years before, but had enjoyed fairly good health since She complained of breathlessness and swelling of the feet The apex beat could not be defined There was a systolic murmur at the mitral area, and the rhythm was irregular owing to the presence of frequent auricular extrasystoles

In January, 1911, she became much worse The dropsy increased orthopnœa was present, and the pulse became very rapid and wholly irregular It was found that the venous pulse was now of the ventricular type (auricular fibrillation) The heart slowed in a few days under ♏ xlv tinct digitalis daily and there was general improvement in her condition A faint diastolic murmur could now be heard at the left side of the lower end of the sternum The improvement continued till April, when the more serious symptoms returned There was again a rapid response to treatment and the pulse fell to 40 with a tendency to coupled beats The dose of digitalis was now halved and kept at this amount for some time

During the next ten years she was able to do her own housework for the most part, although in the latter part of this period attacks of bronchitis became more frequent and prolonged She was kept almost continuously under the influence of digitalis Œdema of the feet was often present to a slight degree, but it disappeared during her periodic rests in bed In the winter of 1920–21 she was very ill with increased dropsy, cyanosis, and enlargement of the liver In the following winter she was in bed for several months, and from that time till her death she was kept almost entirely in her bedroom As a result of the increased rest, and, probably also owing to the development of partial block, the heart tended to a slower rate, so that it was found possible to reduce the amount of digitalis to ♏ xxiv and even ♏ xv daily

In April, 1922, she had an attack of aphasia, possibly embolic in origin This passed off in a few days, and her mental condition became apparently normal On the whole she had little physical distress Though she chafed at her enforced rest she was able to amuse herself with reading and light feminine occupations, and she was probably in greater comfort than she had been for a number of years At the end of 1926 she was sitting up in bed apparently as well as usual when she suddenly fell back unconscious and died in a few hours

Dr John Cowan, in his Gibson lectures,[1] relates a case in which fibrillation was known to exist for nearly 12 years Four years after the onset of fibrillation the patient had her sixth child She died at the age of 39 In the case here recorded fibrillation was present for 15 years, and this in spite of the fact that at the time of its onset the patient was nearly 50 years of age and showed signs of a failing heart One is tempted to suggest that this change of rhythm, although it is so often an added embarrassment to a damaged heart, may have been helpful rather than injurious to this patient, because her heart responded so readily to digitalis and she was fortunately able to continue treatment during the whole of her illness

Hull

A NOTE ON
EPILATION BY THALLIUM ACETATE *

BY F R CURTIS, M SC, M B, CH B LEEDS,
KING'S COLLEGE, STRAND

As the result of experiments begun by A Buschke in 1900 and carried on by himself and others,[2] it has gradually been established that thallium acetate, which 30 years ago had been given up as dangerous by Sabouraud, can safely be used for epilation in cases of ringworm in young children as an alternative to X ray epilation which, as is well known, possesses disadvantages in these cases Early this year G B Dowling and R Kelman,[3] and M Drummond,[4] reported the results of using this method for epilation in children suffering from ringworm Both these reports suggested that the preparation of thallium should be fresh, because the drug might deteriorate As this supposed deterioration is a matter of considerable importance it was thought advisable to investigate it

Using rats as experimental animals I find that epilation occurs constantly on the seventh or eighth day after the subcutaneous injection of a solution of thallium acetate equivalent to 7 5 mg per kilogramme of body-weight In all cases the solution was freshly made immediately prior to injection The best site for demonstrating epilation at that period after injection is, as Dixon[5] points out, at the back of the head and neck and just behind the ears

Solutions of thallium acetate, prepared and placed in sterilised ampoules three months previously, were tested on a series of rats using the dose given above. Epilation occurred promptly on the eighth day after injection, thus showing that the date of the preparation is not of any moment

Another point that may be worthy of mention is the danger of giving a second dose too soon after the first dose Rats may be given a dose of 22 5 mg per kg of body-weight subcutaneously and remain perfectly healthy in every way, though, of course, epilation occurs freely But if 7 5 mg per kg is given and then three weeks later a further 15 mg per kg is given (making the same total of 22 5 mg per kg) the rats die within a few days, having shown loss of appetite and weight, conjunctivitis, stomatitis, and epistaxis This cumulative effect of thallium is very marked and Buschke advises not giving a second dose within two to three months of the first

Experiments on the mode of operation of thallium are now being carried out at King's College and, it is hoped, may throw some light on the problem acromegaly, apparently with success When a proper and reliable system of substitution-therapy had been established probably the operative risk would be less

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[1] Edin Med Jour 1926, xxxiii 550

[*] This work has been carried out in collaboration with the Research Department of Messrs May and Baker Ltd, Battersea, to whom I am indebted for the supplies of thallium acetate

[2] Dermatologische Wochenschrift August 3rd, 1926, and Urologic and Cutaneous Review 1926 xxx 149

[3] THE LANCET Feb 19th, p 389

[4] Ibid Feb 12th p 343

[5] Dixon, W H Proc Roy Soc Med, June, 1927

He had made an effort, in this address, he said, to evolve some order out of chaos, and even if he had done no more than indicate the true latitude and longitude he would feel content

Sir Charles Ballance proposed a cordial vote of thanks to Prof Cushing for his address, recalling the time when, in 1892, he had met the orator, who had come to Queen-square National Hospital as a student He said Prof Cushing had energy and a scholarly mind, and he expressed his intense admiration for him as a man and as a worker in neurology, of which he was a master

Sir StClair Thomson seconded the vote, and after it had been supported by the President it was carried enthusiastically by Fellows rising in their places

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ROYAL SOCIETY OF MEDICINE.

SECTIONS OF LARYNGOLOGY AND OTOLOGY

The annual summer meeting of these Sections was held from June 9th–11th, the Presidents, Dr Andrew Wylie (Laryngology) and Dr Dan McKenzie (Otology) in the chair On Thursday the Laryngological Section met and Mr F B Gilhespy read a paper on

Chronic Hyperplasia of the Upper Jaw

One of his purposes, he said was to draw attention to the efforts made to include cases of this disease under the wider heading of osteitis fibrosa ; another was to indicate some similarities between the condition and that known as otosclerosis In the eight cases recorded by Westmacott the patients suffered from a bony unilateral enlargement of the upper jaw, and six of them had septic teeth in the affected portion At the operation the new bone could be gouged away, as it was somewhat soft The interstices of the bone were occupied by a thick layer of actively proliferating osteoblasts, among them being a few osteoclasts The vascular supply was rich, and there was an abundance of connective tissue cells Westmacott's view was that in these cases there was a reversion of the bone to the embryonic type In none of the eight cases was the premaxilla affected, and this supported the idea that the condition started in the alveolus In cases of this chronic hyperplasia the cranial bones might be remarkably thickened, so that the inner and outer tables could not be differentiated, the structure of the bone being homogeneous Mr G J Jenkins had shown that an osteoporotic process might affect the region of the oval window in osteitis deformans, which some regarded as a form of osteitis fibrosa Mr Gilhespy asked whether chronic hyperplasia ought to be regarded as a simple fibrous osteitis, or whether it was a localised dystrophy of bone, depending perhaps on a biological variation and incited to activity by various causes, of which infection from the mouth or teeth might be one

Mr Walter Howarth referred to two cases of his own, in one of them he had operated seven years ago, and the condition had remained stationary ever since The disease had started in the alveolus, and he considered that dental sepsis was the primary cause —Dr W H Kelson had had two instances of this hyperplasia, neither bearing any relation to oral or dental sepsis Severe and extensive removal had been found to be unwarrantable —Mr Ritchie Rodger spoke of a case of what was regarded as leontiasis ossium, with large bosses on the left superior maxilla and one on the mandible The patient disappeared for four years and then came having several bony rhinoliths The Wassermann reaction, which previously was negative, had become positive He suggested this test being done in all such cases as a routine —Mr T. B Layton thought there was much evidence of an infective cause of this condition —Mr Douglas Guthrie showed two slides of specimens of the condition in cases in which there was no dental sepsis —Mr James Harper spoke of three cases under his care In one a microscopical examination had been made, showing fibrous changes in the bone, but no evidence of malignancy In one case it would be necessary to remove the jaw in order to save the patient's sight —Dr J S Fraser said these cases supported his view that otosclerosis was a chronic inflammatory process —Dr Logan Turner recommended the appointment of a committee to investigate the subject

Mr Howarth read a paper on the

Technique of Laryngofissure

He contended that there were several reasons why tracheotomy should not be done as a preliminary to this operation, for instance, surgical shock was added to by it and blood and secretions were permitted to enter the lungs Also, direct stimulation of the mucosa did not make for smooth anæsthesia and might facilitate the implantation of cancer cells He used intratracheal ether for the operation, and did not perform a preliminary tracheotomy In all these cases the surgeon should be close at hand for 24 hours after the operation He no longer removed the thyroid ala though at one time it was his custom. Diathermy was a great help in stopping persistent oozing, but of course, it could not be used with ether Diathermy merited careful consideration not only for oozing, but as a means of actually removing the cord

The President (Dr Wylie) said that in two cases in which he did the operation without first performing tracheotomy he had great difficulty on account of hæmorrhage, and tracheotomy had to be done immediately afterwards because the patient coughed so much and he became afraid of pneumonia Some patients had bronchitis for a time when ether had been used —Prof Georges Portmann (Bordeaux) said that at his clinic at Bordeaux the practice was to do the operation without preliminary tracheotomy, and under local anæsthesia If, shortly after operation, the patient had respiratory troubles it was easy to do tracheotomy then —Dr Sugara (Buenos Aires) said that in these cases electrolysis could be used He did not do tracheotomy first Great care was taken to stop bleeding at the end of the operation, and electrolysis, very slowly applied, was useful —Mr N S Carruthers contended that some leakage of blood generally took place, and that this might account for the cases in which there was severe bronchitis —Sir StClair Thomson said that Sir Henry Butlin and Sir Felix Semon did not remove the ala of the thyroid, and he himself had at first followed their lead But he had two or three cases in which some necrosis of cartilage occurred. and portions were coughed up during convalescence Since he made a practice of removing the ala he had not had any cases of necrosis On the principle of "safety first," he did preliminary tracheotomy first, especially as it was not dangerous and did not cause shock The only reliable data were those based upon results in large consecutive series of cases He had had only three operative deaths—i e , deaths occurring within a few months of the operation—in his series of 80 cases —Mr W M Mollison spoke favourably of his use of intratracheal ether in two or three cases of laryngofissure The anæsthetic could be washed out of the patient by the insufflation of air or oxygen at the end of the operation

Mr Howarth, in reply, said he had had three deaths following laryngofissure—in earlier operation days—chiefly owing to blood entering the trachea. He did not think any leakage could occur during the administration of the anæsthetic

Mr Layton read a paper on the

Relation of Nasal Polypi to Inflammation of Accessory Sinuses of the Nose

He said his reason for ventilating this question was that for some time he had been disappointed given case that there was a tumour of the hypophysis, was the surgeon justified in removing the gland in its entirety? Or was it possible by such a procedure to inflict on the patient symptoms which might be worse than those it was sought to relieve—i.e., tumour symptoms? Cases had been seen in which the patient was suddenly seized with severe headache, became stuporose and comatose, with a markedly subnormal temperature, and died in the coma. Such a syndrome would be very puzzling to the pathologist unless he realised, and was alert to the possibility, that acute lesions in the pituitary body might provoke such a clinical picture.

Hypopituitarism was the reverse condition to acromegaly. The effects were different according to the period of life—whether the state occurred in pre-adolescence or in adult life. He showed a photograph of a young women, aged 28, a dwarf. At 8 years of age she had a very severe infection—its nature was not clear—and was unconscious for a long time. After recovering from that acute condition she scarcely grew at all for 10 years. At 28 years she was just over 4 feet in height and weighed only 75 lb. It was a case of primary deficiency of the anterior lobe of the pituitary lobe alone. She was sexually infantile, and had never acquired any secondary sexual characters, while the other ductless glands were atrophied.

Photographs were also shown of a case of early senility, the subject being a young woman. The open epiphyses of the fingers, shown by X rays, indicated that by appropriate substitution-therapy she could be given the usual adult womanly characters. These people with pituitary deficiency died of old age in their 'teens, and to relieve their condition recourse must be had to substitution-therapy. This was much more hopeful in these individuals than in cretins, for however much the cretin might be made to grow as a result of appropriate medication, he always remained a dull and mentally incapacitated person. The pituitary cases might even, as a result of treatment, become precocious.

CONDITIONS ASSOCIATED WITH TUMOUR.

Up to the present point, said Prof. Cushing, he had been speaking of non-tumour states. When the pituitary condition was associated with tumour there were many names applied to it. The case on which was based the term Frohlich's syndrome was that of a boy, with a tumour of the gland, who was adipose and sexually indisposed. Almost always the cases which began with a tumour in childhood were those in which the swelling originated from a relic of Rathke's pouch. There might not be any actual enlargement of the sella, but compression was exerted on some portion of the gland. There might exist a combination of symptoms of insufficiency, and these symptoms would usually be much less clear than in the cases of pure anterior lobe deficiency due to the presence of infarcts. When the disease began in early life, its subjects were dwarfed, as the anterior lobe was compressed. When the disease did not show itself until adult life, stature was retained.

Prof. Cushing showed slides to illustrate the frontal approach to the sella with exposure of the chiasma. He was careful not to belittle the seriousness of the operation, especially as these tumours were very adherent, and there was the risk that the surgeon might destroy the hypophysis or its important blood-supply, thereby provoking serious secondary symptoms. In about 83 per cent. of the cases enlargement of the sella could be seen by careful skiagraphy. Patients might be either adipose or lean, according to the part of the gland affected.

He also dealt with hypopituitary cases associated with adenoma. This was a very important class of case, as pituitary disease which led to gigantism was invariably associated with adenoma. What ought the surgeon to do in cases with adenoma? In his own clinic there had now been two or three hundred of these cases which had been operated upon—adenomata of all types. He showed the photograph of a typical case. The man was blind in one eye, the other was afflicted with optic atrophy, he was adipose, and had sexual dystrophy. His adenoma was attacked sufficiently radically to relieve the pressure on the chiasma and to prevent vision from being lost altogether. But was that enough? Was the surgeon justified in going ahead and attempting more thereby running the risk of setting up deficiency states?

The cases with adenoma he divided into the primary, the transitional, and those having an affinity for an acid diet. Some of the tumours in acromegaly were of enormous size. He showed a photograph of the site of a large tumour in the brain of a giant of 8 feet, in whom adenoma was not suspected, as he had no visual disturbance and did not complain of any intracranial symptoms. His sella turcica was seen by X rays to be small, yet he had this extensive intracranial adenoma. In the States the practice was growing to operate on these people before their acromegaly became very pronounced or serious secondaries were manifest. In the case of the first man on whom he operated for the condition, in 1909, he was struck by the great shrinkage of the tissues of the patient's hands. The tumour in his case was small and the immediate purpose of the operation was to attempt relief of the headaches. That result was achieved and 19 years later he was still living, but the acromegaly had steadily progressed notwithstanding. No doubt the relief of the headaches was brought about by freeing the hypophysis from exterior pressure. In another case, that of a woman, he had operated for the relief of intense headaches, and she was much better for three or four years. Then a radical operation was done by another surgeon (as Prof. Cushing was in Europe) and the gland was removed; now the original acromegaly had been transformed into a condition of relative pituitary insufficiency, a preferable state from the patient's standpoint.

The Criteria of Success.

In conclusion, Prof. Cushing said there did not yet exist a standard or criterion of what the surgeon or physician had accomplished in the kind of cases under discussion; there was nothing comparable to the basal metabolic rate by which the activity of the thyroid could be assessed. Still, progress was now being made in this direction. Most of these patients had a high metabolism. Was that due to the pituitary lesion or to the associated or secondary hyperplasia? The crucial indication was what happened to the patient when his hypophysis was removed. Even a partial operation would diminish the metabolic rate. The latter, and the sugar tolerance, were likely to give the criterion of accomplishment, as in the case of thyroidectomy. These patients were very apt to have a relative hyperglycæmia; could this be dissipated by operation? Those were the lines along which work in the States was proceeding.

It was yet too soon to speak with any finality of the effects of operations in this region. Operations were, in practically all cases, done through the nose. Unless the contents of the sella were completely evacuated it was impossible to be certain that some remnants of adenomatous tissue had not been left behind, and these were at any time liable to revive and produce a repetition of the former symptoms. He contended that the fact that any improvement could be brought about, even though it might be only temporary, should be an encouragement to go on. He had no wish to belittle the complexity of the subject. How far it was safe for the surgeon to go, how near to total evacuation of the causal adenoma he might approach, only experience could show. Serious consequences would follow damage to the hypothalamic centre. Trans-sphenoidal procedures from below were blind operations, with a risk of resultant rhinorrhœa and infection. The 4 per cent. operative risk which was the present figure in his clinic was a good one, he submitted. Where vision was impaired the attempt was made to relieve it and the surgeon carefully felt his way. In several cases having a small sella operation had been done with the object of checking the 51 cases The physical conditions found seemed to indicate that the deafness was not a mere accident.

Mr **Richards** said the deafness complained of had existed for periods of from two to ten years, and its progressive increase was the invariable rule All the patients except one complained of tinnitus but evidence as to its duration was unreliable A history of vertigo was elicited in six cases of paracusis in five, of recurring colds and catarrh in ten, of recurrent huskiness in five and of pain such as earache and headache in nine. A family history of deafness was forthcoming in only one instance. In several cases there were varying degrees of septal deflection but without evidence of infection Marked dental disease was conspicuously absent Mr Richards gave a large number of results of hearing and other tests

Mr G J **Jenkins** considered that the term "chronic middle-ear deafness" was misleading The pathology given in most text-books was obviously only speculative, the syndrome seeming to resemble that of an imperfectly described otosclerosis He had not known middle-ear deafness to be progressive in the sense which was implied by the title of the discussion which could be attributed only to middle-ear changes

The **President** (Dr **McKenzie**) gave a clinical review of some progressive cases of the condition among his private patients In 288 cases there was catarrh in 80 residual cicatrisation in 136 active suppuration, in 206 otosclerosis while in 38 there was a combination of three of these conditions In most of the cases tinnitus was the earliest symptom having preceded the deafness by months or years The condition of the membrana tympani gave no indication of the presence or absence of deafness This type of deafness could not be cured nor even arrested by curing the originating catarrh; yet it could be said that the disease process itself was a self-limiting one, as it did not go on to the entire destruction of function He discussed various possible ætiological factors.

Mr H **Norman Barnett** considered that progressive middle-ear deafness could be divided into (1) that following long antecedent middle-ear suppuration, or secondary to tonsil infection or septal deflection, and (2) that in which these factors were absent but in which there had been infection through the Eustachian tube, or other trouble His treatment was directed to causing absorption of the deposited material and the breaking down of adhesions by oto-massage of the tympanic membrane ionisation over the mastoid, and the passage of various vapours into the middle ear He showed three successful cases —Dr **Fraser** thought that the best classification of these cases was into those with normal tympanic membranes and those with abnormal tympanic membranes In his experience, chronic catarrhal otitis media was now a diminishing quantity, whereas otosclerosis was on the increase —Sir **James Dundas-Grant** believed that many cases of chronic progressive middle-ear trouble were secondary to a narrowing of the walls of the Eustachian tube A negative Rinne might be due to unilateral nerve deafness

Mr **Somerville Hastings** dealt with auditory intelligence, which had much to do with the apparent hearing acuity as tested by the audiometer He believed that otosclerosis properly so-called was very rare He thought the right course was to search carefully for sepsis in every case and treat it A good result might not ensue in every case, but it would occur in a sufficient proportion to make it worth while

Mr J. F **O'Malley** said that in some of these cases there was evidently a hereditary factor—namely, a definite middle-ear catarrhal trouble which led to deafness During a cold there was definite deafness, but on losing the cold the hearing was restored. If hearing did not clear up, an otosclerotic change took place in the labyrinth. He thought otosclerosis was becoming more frequent.

The discussion was continued

Dr **Graham Hodgson** demonstrated a large series of radiograms of the normal and abnormal labyrinth, and Mr **Watkyn Thomas** gave a clinical description of the cases illustrated

Cinematograph Demonstration.

On Saturday morning, before the discussion of clinical cases Prof **Portmann** gave a cinematograph demonstration of an operation for draining the saccus endolymphaticus for the relief of vertigo He began his dissertation by discussing the comparative anatomy of the auditory apparatus of various orders and species leading up to that of man He then passed to a consideration of the physiology and function of the saccus endolymphaticus and minutely described the surgical entry to that structure for the purpose of incising and draining it for the relief of vertigo In two of his five cases there had been a complete disappearance of the vertigo The operation, he declared, was a good one and was not dangerous in the hands of an otologist It was intended for cases in which other forms of treatment had failed to relieve the vertigo

Dr **Jobson Horne** gave an epidiascopic demonstration of morbid specimens of the saccus endolymphaticus showing the course of the disease, and the results which ensued in a number of cases He said this structure might be regarded as an instance of how the vestigial remains of an embryonal structure might become a source of danger.

Sir **Charles Ballance** expressed the thanks of the Section to Prof Portmann for his admirable demonstration and said that perhaps operation in the way indicated might be tried in some cases of deafness as well as for vertigo

A discussion followed

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.

At a meeting of this Society held on June 2nd, Dr E **Rivaz Hunt**, the President, in the chair, Dr E R **Fothergill** opened a discussion on

Mental Exhaustion and Drug Addiction

To the sufferer from mental exhaustion, he said, the advice of friends is generally worse than useless, and until the patient settles down to deal with his trouble, and stops thrusting it back into the subconscious all else will fail The first step to be taken is to secure an appropriate atmosphere and the services of an attendant The patient should go to bed, and after constipation—from which these patients usually suffer—has been dealt with, he should be given full diet He should be encouraged to get his brain to sleep until the physical state has been re-established, by which time many of the symptoms will have disappeared It will then be time enough to discover from the patient the cause of his illness and to treat it As much sleep as possible should be obtained At first no books or papers should be allowed, but after a while the patient will probably ask to see a picture paper The date on which this happens should be noted. The relatives should not have any communication with the patient except by an occasional postcard, but the doctor should be assisted by them to discover the possible cause of the illness Records of weight should be taken at intervals of 14 days The patient must first be got to believe that there is no physical or mental disease and that his trouble can be dealt with; he must cease deploring the past and dreading a repetition of it, and must be encouraged to turn his thoughts to the future into a constructive channel. Relatives either regard the question of certification with horror or find it attractive because of ulterior motives Great care must be exercised There are with the traditional treatment of nasal polypi by pulling them away Unless the case were one of a single polypus beneath the middle turbinate he did not find that this method was curative, in other words, for multiple polypi this treatment was no more than palliative He asked whether polypi ever existed unless there was coexistent disease of a sinus When there was no sinus disease the polypi were in large airways, and seemed to be in the nature of a hypertrophy to compensate for the extra size of the airway This type was, he considered, best left alone In most cases of multiple polypi the underlying disease was an inflammation of accessory sinuses Nasal polypi might be associated with catarrhal inflammation in the ethmoid and the maxillary sinus He did not think that acute catarrhal sinusitis ever became acute suppurative sinusitis, his view was that from the beginning they were distinct from each other When a sinus was the seat of acute suppuration he did not open it His treatment was to attempt to remove the whole ethmoid by an external incision, so as to avoid damage in the region of the olfactory nerve and the cribriform plate

Dr W S **SYME** said he believed that in every case of multiple polypi in the nose there was disease in the antrum as well as in the ethmoid cells His rule was to open the ethmoid, and he had never regretted having done so —Mr C A S **RIDOUT** thought that the external operation was not done in enough of the cases of multiple polypi of the nose —Dr J S **FRASER** said he did not feel that he ought to operate on the antral mucosa for nasal polypi, as in a number of such cases which he had investigated he had found it was healthy Proof-puncturing and washing out the antrum gave a good indication as to whether it should be operated on If after clearing the nose the fluid returned at once and freely, obviously the antrum was not filled with polypi If, however, some force was needed to send the fluid through the syringe, there was obviously obstruction, and the radical operation should be performed —Dr **SUGARA** said that the ethmoid was not implicated in all these cases, because treatment directed to it had no effect in some instances Radical operation should be carried out when polypi recurred —Mr J **ADAM** laid stress on the importance of pressure in the causation of polypi An uvula, if caught between two enlarged tonsils, became polypoid Polypi would continue to form until the pressure was relieved —Mr **GILHESPY** thought that the external operation could not be done through a small incision, the procedure needed to be thorough, and he always used a longer incision

Mr **DOUGLAS GUTHRIE** read a paper, in collaboration with Mr N **DOTT**, on the occurrence of

Brain-tissue in the Nose,

the so-called nasal glioma They said that the downward extension of a cerebral tumour towards the nasal cavity seemed to be very rare They quoted a case of glioma of the frontal lobe of the brain, with an extension into the left nasal cavity

The patient, a man, aged 33, was admitted because of sudden coma, and symptoms suggesting cerebral compression There was no history obtainable of any nasal or aural discharge Following a gun explosion, deafness in the left ear occurred suddenly Headache, vomiting, and nausea came on later A week before admission there was sluggish cerebration, and the pulse-rate varied between 54 and 60 The temperature was consistently subnormal The operation performed was the left subtemporal decompression of Harvey Cushing, and evidences of a deep-lying vascular tumour were found An attempt was made to expose this The temperature rose to 105 4° F, and it was very difficult to keep it down The wound healed soundly, but he died, after a relapse, on the thirteenth day The tumour, it was found, had been growing backwards and invaded the motor fibres of the internal capsule There was seen to be a marked convolutional flattening, and a projection at the site of the decompression

Prof **PORTMANN** said it was very difficult to know whether such tumours were simple gliomata or glio-sarcomata —Dr **FRASER** asked whether there was anything distinctive in the appearance of the nose in cases of this kind which could be taken as a warning that something more than ordinary nasal polypus was being dealt with —Mr **GUTHRIE** replied that this patient seemed to have an ordinary polypus, but perhaps the polypus was greyer and harder to the touch than usual

Mr M **VLASTO** contributed a paper on

Meningitis Originating in the Sphenoidal Sinus

The sphenoidal sinus, he said, could be regarded as the carrying site of organisms of a non-thrombosing type, usually of low virulence In the case of meningitis due to infection by other pyogenic organisms, this sinus was a seat of active inflammation Intracranial complications of sphenoidal sinus suppuration fell into one of the three following groups (1) meningitis, (2) thrombophlebitis of the venous sinuses, (3) meningitis and thrombophlebitis Of 42 cases collected by Sir StClair Thomson, 30 died of basal meningitis, and in 17 cases this was the only predominant lesion He described a typical case, which was reported by Roughton, the patient dying 56 days after admission to hospital At the autopsy basal meningitis was present, a thick layer of pus being between the region of the optic chiasma and the pons Mr Vlasto thought there were many reasons why this condition was not recognised before death Patients frequently did not realise the gravity of a purulent nasal discharge, and failed to report it And the diagnosis might be side-tracked by the coexistence of suppurative middle-ear disease After every death from meningitis, the post-mortem examination should include the opening of the sphenoidal sinus cavities When an otitic cause of a case of meningitis had been diagnosed and the operative findings were not conclusive, the possibility of sphenoidal sinus infection should be considered

Dr P **WATSON-WILLIAMS** spoke of the importance of exploring the sinuses in mastoid cases as a routine procedure, even in children —Dr **LOGAN TURNER** urged the need of careful microscopical examination at autopsy, as involvement of the cavernous sinus might be shown —Sir **STCLAIR THOMSON** regretted that examination of the sinuses did not seem to be part of the routine post-mortem examination in all hospitals when the lesion was cranial It could be done without disfiguring the cadaver

Dr **SYME** read a paper in which he gave reports on three bronchoscopic cases, the findings in which prompted him to urge that this form of examination should be done more often

Progressive Middle-ear Deafness

On Friday morning the Otological Section listened to a number of papers on this subject

Dr G **SCOTT WILLIAMSON** and Mr **HORACE RICHARDS** read a joint paper in which they submitted a preliminary analysis of a series of cases of chronic deafness, showing lines of possible investigation into the ætiology Only cases of idiopathic deafness were taken, and all the aspects—cardiac, respiratory, digestive, urinary, neuromuscular, genital, and hæmopoietic—were examined It was not contended that these tests added materially to the information furnished by the ordinary clinical examination Fifty-one cases were examined, and seven of these showed signs of established disease Treatment improved the general condition and with it the tinnitus, which was no longer continuous The 44 other cases were within the normal, but showed a tendency to tachycardia and their cardio-respiratory balance was easily disturbed Many facts pointed to the deafness having been started in school life, when there was a low auditory acuity, a real defect in regard to education In all the 51 cases the nose was small and thin, with a delicate bridge and attenuated skin, the alar muscles were atrophied, and the nostrils no more than slits But the patients were not mouth-breathers, though they all had nervous instability. There were only five males in

Treatment of Diabetes Mellitus

Fourth edition By O LEYTON, M D , F R C P , Physician to the London Hospital London Adlard and Son, Ltd. 1927 Pp 98 6*s*

THE discovery of insulin and the revolution which it has worked in the treatment of diabetes has necessitated a new edition of Dr Leyton's book and caused a change of its name from "The Modern (Allen) Treatment of Diabetes Mellitus" The new edition has been largely rewritten and is now a plain statement of Dr Leyton's views and practice, set out in simple language A glossary of medical terms is included so that patients may read and understand In the preface is a statement of some importance showing clearly the ideals on which the author works He says : "One has reason to believe that the beta cells of the islets of Langerhans regenerate in time, but the process is a slow one, and the recovery may take years to become complete This chance of recovery makes it advisable for all patients except those in extreme old age to arrange a diet which suffices to nourish their bodies and sufficient insulin to keep the blood-sugar below 0 15 per cent , and thereby avoid over-stimulation of the newly formed insulin-producing cell, which would lead to its early destruction" The importance of care in making the diagnosis is emphasised and the condition of renal glycosuria or, as Dr Leyton prefers to call it, negligible glycosuria, is explained very carefully The test for sugar tolerance by giving the dextrose intravenously seems rather complicated and the alternative method of allowing the patient to eat an ordinary diet for six months before repeating the test a little risky Many clinicians would prefer to restrict the diet to a certain extent and repeat the test in three months or sooner The diet scheme remains unaltered and still starts with a period of fasting which may last for four days on occasion If sugar is still present, insulin is then started The subsequent stages of the diet are designed to increase the carbohydrate value daily until the diet, on the fifteenth day, contains 49 g of carbohydrate, 52 g of protein, and 117 g of fat; caloric value 1460 If this amount of food satisfies and the blood-sugar is normal no insulin is given and the diet is kept at this level for many months Dr Leyton does not mention the alternative method of treatment with a maintenance diet of about the same value as that of his fifteenth day There are two schools in England, just as there are in the United States, and Dr Leyton belongs to the one which believes that a short period of under-nutrition increases the chance of recovery of sugar tolerance much more than the alternative method He also never uses the high carbohydrate and high insulin treatment advocated by some writers The rules for the administration of insulin are clearly set out A knowledge of the blood-sugar is very important, and as it is often difficult for patients who live away from laboratories to have this estimated, Dr Leyton is accustomed to teach patients how to do this by Folin and Wu's method The index is adequate The food tables are sufficiently detailed for most patients

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Recent Advances in Hæmatology.

By A. PINEY, M D , Research Pathologist, London Cancer Hospital London J and A. Churchill 1927 Pp 272 12*s* 6*d*

IN his introduction the author describes hæmatology as "that branch of biological science which deals with the morphology of the blood and blood-forming tissues" Hæmatology as thus defined is a subject of which it is difficult to describe the recent advances, on account of their extreme paucity Almost the only section of the volume containing matter that falls strictly under this head is that concerning the hæmorrhagic diatheses In the knowledge, and to a less extent in the treatment of these conditions, notable advances have been made in the past few years, and these are adequately summarised by Dr Piney. This is the first volume to appear in this country in which a serious attempt has been made to bring together the recently won knowledge on the subject It is a matter for regret that considerations of space did not permit an even more extensive excursion into this field The one other direction in which notable advance has been made in the knowledge of the blood, that of the blood groups and their significance, has not been regarded by the author as coming within the scope of the work A section on this subject would, however, have greatly enhanced its value For the rest this volume follows in a competent manner the usual lines of text-books on the morphology of the formed elements of the blood and of the blood-forming tissues, and is a useful and complete compendium of the present state of knowledge on this subject

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Pathological Micro-organisms of the Eye

Die pathogenen Mikro-organismen des Auges By Prof. Dr F v HERRENSCHWAND Berlin and Vienna Urban and Schwarzenberg 1927. With 17 illustrations and 12 coloured plates. Pp 310 M 24

DR Axenfeld's work on the Bacteriology of the Eye came out in 1908, and was at once translated into English by Angus McNab, one of the early victims of the war Prof Herrenschwand does not desire to compete with that work, but to provide one which shall prove supplementary to it and to bring the subject up to date The scheme of his book differs somewhat from that of Axenfeld's After an introductory chapter on the general morphology of pathogenic bacteria, each organism pathogenic to the eye is dealt with fully, including its relation to other pathological conditions both of men and of animals ; the results of injections of the organism into animals are described, and the diseases of the eye which it is liable to cause in man are stated A bibliography of the literature bearing on each micro-organism in turn is appended, and since this is brought up to the end of 1926, it should prove especially valuable If we may select one section of the book as of peculiar importance it is that dealing with the recent work on *Spirochæta pallida* In an appendix directions are given for the collection of material from the eye, and for methods of staining, cultivation, and inoculation. The 12 coloured plates, each with from four to seven reproductions of drawings from stained specimens, leave nothing to be desired

The work will be valued in every library attached to a pathological ophthalmic department

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Mind and Personality

By WILLIAM BROWN, M D , M R C P , D Sc , Wilde Reader in Mental Philosophy, Oxford London : University of London Press 1926. Pp 354. 12*s* 6*d*.

DR. Brown's readable volume can only be treated with justice if it is regarded as a collection of essays rather than a work with a unified thesis. That the author has a point of view we have little doubt But it is due to a philosophic attitude rather than a scientific detachment which finds a thesis from the examination of data of experience Philosophy rather than psychology seems to be the author's pursuit He appears to be bothered by the universe rather than curious about it In scanning a wide cultural horizon for some philosophic resting-place he pauses from time to time to quarry in the strata of the human mind, but his researches are always metaphysically coloured. This by no means detracts from the interest of the volume before us It gives everything with which he deals a background against which empirical data derived from experimental psychology and clinical psychology are thrown into relief and acquire a value and a meaning which, if a little alien to the detached method of science, will prove satisfying and restful to those of us who, immersed in the welter of discrete facts, find solace in the unifying value of philosophy Philomany people of undoubtedly unsound mind who can be brought back within a very short while if suitably treated Should certification be delayed on this account, it is as well to secure the support of another doctor for the delay, and to place the facts before the Board of Control

Two facts that stood out in his experience of drug addiction, said Dr Fothergill, were that, apart from alcoholism, it is found only amongst intellectuals, and that without corroborative evidence nothing the patients say is to be relied on A voluntary addict, without disease or injury as the excuse, must be regarded as having been potentially mentally unbalanced If this is accepted, then treatment will follow on similar lines to that for mental exhaustion, as it would be useless to treat the drug addiction without treating the underlying cause Drug addiction as the result of disease or injury becomes increasingly difficult to treat when the physical reasons for giving the drug are gone Where there is no disease or injury, the treatment is by tapering—in the case of alcohol, at the commencement, with morphia and its derivatives, at the end It must be certain that no drugs can reach the patient without knowledge of the attendant or the doctor The amount of liquid in the barrel of the syringe, or the size of the suppository, must never be varied As the treatment progresses, and the strength of the dose is decreased, it must be anticipated that the patient will become more difficult to handle

Reviews and Notices of Books.

SECRETION OF THE URINE

Second edition By A R CUSHNY, M A, M D, LL D, F R S, late Professor of Materia Medica and Pharmacology in the University of Edinburgh. London Longmans, Green and Co, Ltd 1926 Pp 283 16*s*

ONLY those who have worked on the problem of urinary secretion are in a position adequately to assess their debt to the author of this monograph The first edition, which appeared in 1917, proved a monumental landmark, for before its advent the masses of uncorrelated facts had merely led to a chaos of hypothesis and misrepresentation The value of a scientific theory is not to be reckoned entirely by its power to explain the experimental facts elicited in the past, but also by the extent to which it can be readily modified in order to bring it into line with the latest established facts Cushny's theory of the mechanism of the secretion of urine illustrates these desirable qualities to a high degree

In this edition further evidence in favour of filtration as being the function of the glomeruli is included, emphasis being laid on the experiments of Wearn and Richards in the frog and on those of Starling and Verney, who used the heart-lung-kidney preparation in the dog Cushny originally imputed to the tubules the simple function of reabsorbing a fluid of unvarying composition from the glomerular filtrate, this fluid being an optimal fluid and presumably resembling Locke's fluid in its composition The theory of reabsorption by the tubule cells has been strengthened by recent work both in the case of the frog and in that of the mammal, but the original conception by the author of the simplicity of composition of the fluid reabsorbed is no longer in accordance with the experimental facts A comparison of the concentration ratios of, for example, urea and sulphate in plasma and urine shows that that of sulphate is higher than that of urea Urea therefore cannot be regarded as a no-threshold substance Such observations necessitate a change in our conception of the nature of the reabsorbed fluid, so that we now look upon this fluid as containing the following substances water and glucose; chloride and bicarbonate; potassium, urea, and urate; phosphate, sulphate, creatinin, and foreign substances—the degree to which each of these substances is reabsorbed varying inversely with its position in the group, that is to say, water and glucose show the highest degree of reabsorption, creatinin the lowest

The "modern theory of urinary secretion," originally outlined by Cushny, has thus been slightly modified to conform to the facts elicited by recent researches In its present form it retains the valuable qualities of simplicity of conception and of incentive to further work and can best be studied in the monograph prepared by Prof Cushny before his death

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SEMILUNAR CARTILAGES OF THE KNEE

Pathologie des Menisques du Genou. Par ALBERT MOUCHET, Chirurgien des Hôpitaux de Paris, et LOUIS TAVERNIER, Professeur agrége à la Faculté de Médecine de Lyon, Chirurgien des Hôpitaux. Paris Masson et Cie 1927 Pp 98 Fr 18

THIS monograph embodies the report on the subject presented by the authors to the thirty-fifth French Congress of Surgery, which met at Paris in 1926 Internal derangement of the knee-joint has for many years been a familiar subject of discussion in this country, and later in America, but in France it has attracted little attention till recently, possibly the vogue of football in that country has drawn attention to it, although, as is well known, such injuries as displacement of a knee cartilage are common among miners in all countries

After shortly describing the normal anatomy of the parts concerned, the authors turn to pathological anatomy and describe the lesions which most generally are found after injury As to traumatic meniscitis, described by Roux, of Lausanne, the authors conclude that it is not a pathological reality, and that the changes found do not concern the fibrocartilages themselves They hold the view that rotation of a flexed knee is not necessarily one of the causes of damage to the cartilages, for they have recorded cases in which simple forcible extension without rotation has produced rupture of a meniscus The determining cause, in their opinion, is some interference with free movement between condyle and fibrocartilage Among secondary complications they mention loose bodies, dry arthritis, and injury to ligaments They are agreed with previous observers as to the preponderating frequency of injuries of the internal cartilage After considering the claims of Roux to have cured "meniscitis" by massage, the authors dispute, as aforesaid, the existence of this lesion, and hold that Roux's cases were really those of limited tearing of a cartilage, which cannot be cured by massage Meniscopexy or fixation of the torn cartilage is dismissed in a few words as useless ' The operation of arthrotomy for removal of torn cartilages, which the authors favour, is one by a transverse incision which no doubt gives a better view of the interior of the joint than does a longitudinal one, but which, as described by them, involves division of one of the lateral ligaments of the joint The importance of early active movements after operation, in order to prevent stiffness, is properly emphasised Proper caution is advocated in cases in which the symptoms are equivocal, many of these clear up without arthrotomy, showing no rupture of a cartilage

The last few pages are devoted to consideration of cysts of the cartilages Such cysts are almost entirely confined to the external cartilage Excision of the cartilage and cyst is the *only proper treatment* The book is well illustrated with 26 figures, most of which are semidiagrammatic drawings, which are better than photographs for their purpose It should be of value in France, where monographs on the subject are rare, but in this country, where so much has been done and written in the surgery of the knee-joint, it is less likely to attract attention.

THE LANCET.

ONDON, SATURDAY, JUNE 18, 1927.

ATH CERTIFICATION UNDER THE NEW ACT.

EN the Births and Deaths Registration Act 26 comes into operation on July 1st it will *two important purposes* The first of these is rotection of the community from crime. The f 1874 left certain loopholes which required to opped up The registrar s certificate or the ers order was sufficient authority for burial, t did not always follow that either of these nents was actually produced; it remained tly legal for a burial to be conducted without n authority provided that the registrar was ed after the ceremony The new Act prohibits al of the body except upon the registrar's cate or coroner s order, and it sets up a system interchecking which should make it impossible document authorising the burial of one person used for the burial of another or for the burial of notified person to be carried out without the rar s knowledge Further, by requiring the ration of stillbirths and by insisting that for purpose information shall be furnished under n specified heads, the new Act should prevent burial of children as stillborn when in fact were born alive, but their lives were taken ly after birth Another new provision is that requires the medical practitioner to send the certificate direct to the registrar instead of ing it to a relative, the latter practice being ed to have enabled unscrupulous persons to ertificates for improper purposes Finally, the Act empowers the Minister of Health (with oncurrence of the Home Office) to make regulafor the following matters The Minister may ibe the period and form of notice to be given e coroner before a body is removed out of and, he may impose conditions and restrictions embalming and upon the disposal of bodies wise than by burial or cremation—for example, l at sea, he may also regulate the period of a body may be retained after death in an nted house or other premises The regulations under this power have not yet been published. anwhile the Registrar-General has been bringing own regulations up to date by making a lidated set governing the registration of births, irths, deaths and marriages, the re-registration e birth of legitimated persons, and the appropriate in the case of adopted children. The Registrarral s regulations do not much concern the medical tioner; the latter will, however, bear in mind new duty (already mentioned) of delivering t to the registrar every certificate of the cause of . Registrars will furnish practitioners with a of officially franked envelopes for the posting of the certificates, and also with a stock of medical certificate books Each form in these books is a threefold document At the outer side there is the detachable form of notice on which the practitioner, after signing a certificate of the cause of death, must give written intimation of the fact of signing to the relative or other person liable to act as informant of the death for registration purposes Adjoining this form of notice comes the form of medical certificate itself The rest of the page consists of a counterfoil for the use of the medical practitioner which he is advised to fill up in all cases The counterfoil, the medical certificate, and the notice of signing will all bear the same serial number in the case of each particular death, and will thus provide an easy method of connected reference

The second purpose of the new Act is the compilation of more accurate medical statistics. During the half century or so since the Births and Deaths Registration Act of 1874 came into force, the form of the medical certificate of the cause of death has remained almost unaltered. The modification in the "Y" series of books, issued in the autumn of 1924, cleared up certain ambiguities which in practice were found to attach to the old form, but retained its essential characters The contents of the certificate have now undergone radical revision after consultation with persons representing the leading bodies in the medical profession Emphasis is again laid on the desirability of employing as far as possible only such terms to describe the cause of death as are recognised in the nomenclature of the Royal College of Physicians of London, there should be no hesitation in complying with this very reasonable wish expressed by the Registrar-General. But the difficulty of exact statement has arisen and will still arise where the practitioner in attendance during the last illness is unable to ascribe the death to a single cause, the distinction to be drawn between "primary," "secondary," and "contributory" on the existing certificate has always been found difficult to interpret, and the new form has been designed to avoid this difficulty and to make the official records of the causes of death a more exact summary of the opinions expressed in the certificate than hitherto To this end the new form of certificate is divided into two sections In the first section is to be entered the immediate cause of death as well as any morbid condition or conditions which led up to it the latter being stated in order backwards from the immediate to the remoter causes In the second section are to be entered conditions not in the immediate chain of pathological events which have led to death but which have none the less contributed seriously to the fatal issue Examples appended to the medical certificate book serve to make these points clear, they are reproduced along with a facsimile of the new certificate itself on p 1314 of our present number. Although provision is thus made for a series of entries, the Registrar-General begs the practitioner in each case to consider whether the essential features cannot be epitomised by statement of a single cause The practitioner's attention is also called to the form of certification desirable in the case of deaths from cancer, childbirth, violence, or anæsthetics, and an entry on the back of the certificate form indicates to the Registrar-General whenever the practitioner is in a position to give him additional information later as to the cause of death, for the purpose of more precise statistical classification There is no doubt that in its new form the death certificate is likely to serve its many and varied purposes better than any which has previously been devised.

sophically Dr Brown is deeply indebted to Bergson—a philosopher who in many ways has done as much for the affective life in philosophy as Freud has done for it in psychology There are essays of course dealing with subjects of practical psychological significance, and some of them form excellent epitomes of recent work in particular fields For example, the chapter on Mind and Experimental Methods will be to the beginner a very valuable survey of the introduction of laboratory methods into psychology, and here the author speaks as one in authority The chapter on Mathematical Ability is equally good Dr Brown gives us of his experiences in the psychopathological field, and while distinctly impressed by the psycho-analytic approach is by no means carried away He is to be congratulated on having been deeply analysed without suffering a scorch mark in the passage through the fire—he found his religious attitude remained unchanged In our experience this is rare

Dr Brown's volume will be a stimulus to those who are not actually engaged in psychopathology and a pleasant interlude to the specialist who needs a little philosophic leaven added to his occasionally arid researches

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MEDICAL DIATHERMY.

Leitfaden der Diathermiebehandlung By A Laqueur, Medical Director of the Hydrotherapeutic and Mechanotherapeutic Institute of the Rudolf Virchow Hospital, Berlin. Berlin S Karger 1926 Pp 134 M 4 80

Die Klinische Anwendung der Diathermie By Dr Iwan von Buben, Assistant in the Frauenklinik of the University of Budapest With a foreword by Prof Dr Bela v Kelen, Director of the Rontgen Institute of the University of Budapest Leipzig Johann Ambrosius Barth 1926 With 85 illustrations Pp 175 M 11.40

Anleitung zur Diathermiebehandlung Second edition By Dr G Bucky Berlin Urban and Schwarzenberg 1927 With 132 illustrations Pp 200 M 6

A good impression of the extent of the therapeutic field of medical diathermy and the progress that has been made by German and Austrian specialists in the subject is conveyed by three books published in Berlin and Leipzig during the last year. In all of them brief introductory accounts are given of high-frequency currents and the relevant physical principles The path and distribution of these currents in various conductors and methods of applying them to different regions of the body are described The action of the diathermy current on the body in health and in disease is shown, and the subject of dosage is considered The maladies which respond to diathermy and methods of applying the treatment are discussed under the headings of the different systems and regions of the body, surgical diathermy being less fully considered than medical diathermy Dr von Buben devotes only 22 pages to it, while the other authors give mere introductory outlines

Dr von Buben speaks highly of the value of diathermy in gynæcology, particularly in cases of chronic infection of the uterus and urethra and of the pelvic supporting tissues In the treatment of sciatica he describes a method in which three electrodes are applied respectively to the back of the hip, front of the thigh just above the knee, and to the middle of the leg These electrodes are connected to the three terminals of the diathermy machine He seems to think that better results are obtained when the whole length of the nerve is subjected to diathermy than when the treatment is applied to the regions to which the pain is referred Dr von Büben's book is clearly printed in large type and has a number of useful illustrations

Dr Laqueur's book, smaller in size and with fewer pictures, will be a useful guide to those who wish to learn the essentials of the subject The author describes some interesting experiments which h conducted in order to show the influence of diatherm on organisms introduced into the knee-joints of dogs He showed that organisms such as the cholera vibrio the pneumococcus, and the gonococcus, which ar sensitive to moderate degrees of heat, were eithe destroyed or rendered much less virulent afte diathermy had been applied to the joints, while th temperature reached did not damage the tissues of th host

Dr Bucky's book is an enlarged edition of a worl written as long ago as 1911 , it contains a number o useful line drawings which show the position of th electrodes for the treatment of different regions Under the headings of various diseases the autho describes, in tabular form, the method of action of th diathermy, the course of the disease and the results o the treatment, the method of application of th current, and the frequency Of special interest is th so-called " alternator " devised by Dr Bucky him self By its means the operator is able to direc the current through regions by the " cross-fire ' method In this way a greater degree of heat may b obtained in deep regions without undue heating of th superficial tissues Dr Bucky also describes hi " pulsator " By means of this instrument the curren is made to oscillate intermittently The autho believes that better results can sometimes be obtaine when this instrument is used Dr Bucky call attention to a curious and uncommon form of bur which may be caused in the subcutaneous fat whe the diathermy current is passed through the sk and superficial fascia Fat offers a much highe resistance to the current than the skin and can b damaged by a diathermy current which is insufficien to harm the skin.

The books by Bucky and von Buben contain, i index form, abundant references to the literature o medical diathermy

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SCIENCE AND RELIGION

The Creator Spirit By C E Raven, D D Canon of Liverpool London Hopkinson an Co. 1927. Pp 310 8s 6d

There have been a number of books and paper lately about science and religion This one strike us as one of the best and most helpful, especially fo those who are not very deeply trained in technica philosophy It is based on Hulsean lectures given i Cambridge, England, and Noble lectures in Cambridge Mass , and Canon Raven brings into the discussion range of knowledge in history, theology, philosophy and biology which is an admirable equipment for hi active churchmanship He adds, too, the specia qualification of being a good field naturalist, and draw many illustrations from his personal knowledge o birds and moths—a line of study which brings ou clearly the problems which biology has to solve if i does not do very much to solve them Broadl speaking, the author is an emergent evolutionist wh rejects altogether the probability of any dualisti interpretation of human experience Religion is a imperfect explanation in so far as it fails to explai the fields which have been specially explored b naturalists , the scientific account of the world fail by as much as it excludes religious data Evolutio has proceeded in one continuous series from th electron, through atoms, molecules, substances, lif intelligence, *spirit, to the saint* which is the culmina tion that we can at present apprehend ; it has happene neither by luck nor cunning but by the love of Go Canon Raven assumes as axiomatic what is funda mental to the Christian position ; he states the ca against Darwinism too emphatically ; the discussio comes, as it seemingly must always come, to poin which are self-evident to one mind and incomprehe sible to another But the whole is a sincere and ab attempt to achieve progress in a line where progre at last seems possible, and where it would be welcom by at least as many naturalists as theologians commend it heartily

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ONDON, SATURDAY, JUNE 18, 1927.

ATH CERTIFICATION UNDER THE NEW ACT

EN the Births and Deaths Registration Act 26 comes into operation on July 1st it will two important purposes The first of these is rotection of the community from crime The t 1874 left certain loopholes which required to opped up The registrar's certificate or the r's order was sufficient authority for burial, , did not always follow that either of these ients was actually produced, it remained tly legal for a burial to be conducted without n authority provided that the registrar was d after the ceremony The new Act prohibits al of the body except upon the registrar's cate or coroner's order, and it sets up a system nterchecking which should make it impossible document authorising the burial of one person used for the burial of another or for the burial of notified person to be carried out without the 'ar's knowledge Further, by requiring the ation of stillbirths and by insisting that for urpose information shall be furnished under n specified heads, the new Act should prevent urial of children as stillborn when in fact were born alive, but their lives were taken r after birth Another new provision is that requires the medical practitioner to send the certificate direct to the registrar instead of ng it to a relative, the latter practice being ed to have enabled unscrupulous persons to rtificates for improper purposes Finally, the Act empowers the Minister of Health (with ncurrence of the Home Office) to make regula- for the following matters The Minister may ibe the period and form of notice to be given coroner before a body is removed out of nd, he may impose conditions and restrictions embalming and upon the disposal of bodies ise than by burial or cremation—for example, at sea, he may also regulate the period of a body may be retained after death in an ted house or other premises The regulations under this power have not yet been published nwhile the Registrar-General has been bringing wn regulations up to date by making a dated set governing the registration of births, ths, deaths and marriages, the re-registration birth of legitimated persons, and the appropriate n the case of adopted children The Registrar- l's regulations do not much concern the medical ioner, the latter will, however, bear in mind w duty (already mentioned) of delivering to the registrar every certificate of the cause of Registrars will furnish practitioners with a of officially franked envelopes for the posting of the certificates, and also with a stock of medical certificate books Each form in these books is a threefold document At the outer side there is the detachable form of notice on which the practitioner, after signing a certificate of the cause of death, must give written intimation of the fact of signing to the relative or other person liable to act as informant of the death for registration purposes Adjoining this form of notice comes the form of medical certificate itself The rest of the page consists of a counterfoil for the use of the medical practitioner which he is advised to fill up in all cases The counterfoil, the medical certificate, and the notice of signing will all bear the same serial number in the case of each particular death, and will thus provide an easy method of connected reference

The second purpose of the new Act is the compilation of more accurate medical statistics During the half century or so since the Births and Deaths Registration Act of 1874 came into force, the form of the medical certificate of the cause of death has remained almost unaltered The modification in the "Y" series of books, issued in the autumn of 1924, cleared up certain ambiguities which in practice were found to attach to the old form, but retained its essential characters The contents of the certificate have now undergone radical revision after consultation with persons representing the leading bodies in the medical profession Emphasis is again laid on the desirability of employing as far as possible only such terms to describe the cause of death as are recognised in the nomenclature of the Royal College of Physicians of London, there should be no hesitation in complying with this very reasonable wish expressed by the Registrar-General But the difficulty of exact statement has arisen and will still arise where the practitioner in attendance during the last illness is unable to ascribe the death to a single cause, the distinction to be drawn between "primary," "secondary," and "contributory" on the existing certificate has always been found difficult to interpret, and the new form has been designed to avoid this difficulty and to make the official records of the causes of death a more exact summary of the opinions expressed in the certificate than hitherto To this end the new form of certificate is divided into two sections In the first section is to be entered the immediate cause of death as well as any morbid condition or conditions which led up to it, the latter being stated in order backwards from the immediate to the remoter causes In the second section are to be entered conditions not in the immediate chain of pathological events which have led to death but which have none the less contributed seriously to the fatal issue Examples appended to the medical certificate book serve to make these points clear, they are reproduced along with a facsimile of the new certificate itself on p 1314 of our present number Although provision is thus made for a series of entries, the Registrar-General begs the practitioner in each case to consider whether the essential features cannot be epitomised by statement of a single cause The practitioner's attention is also called to the form of certification desirable in the case of deaths from cancer, childbirth, violence, or anæsthetics, and an entry on the back of the certificate form indicates to the Registrar-General whenever the practitioner is in a position to give him additional information later as to the cause of death, for the purpose of more precise statistical classification There is no doubt that in its new form the death certificate is likely to serve its many and varied purposes better than any which has previously been devised sophically Dr Brown is deeply indebted to Bergson—a philosopher who in many ways has done as much for the affective life in philosophy as Freud has done for it in psychology There are essays of course dealing with subjects of practical psychological significance, and some of them form excellent epitomes of recent work in particular fields For example, the chapter on Mind and Experimental Methods will be to the beginner a very valuable survey of the introduction of laboratory methods into psychology, and here the author speaks as one in authority The chapter on Mathematical Ability is equally good Dr Brown gives us of his experiences in the psychopathological field, and while distinctly impressed by the psycho-analytic approach is by no means carried away He is to be congratulated on having been deeply analysed without suffering a scorch mark in the passage through the fire—he found his religious attitude remained unchanged In our experience this is rare

Dr Brown's volume will be a stimulus to those who are not actually engaged in psychopathology and a pleasant interlude to the specialist who needs a little philosophic leaven added to his occasionally arid researches

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MEDICAL DIATHERMY.

Leitfaden der Diathermiebehandlung By A LAQUEUR, Medical Director of the Hydrotherapeutic and Mechanotherapeutic Institute of the Rudolf Virchow Hospital, Berlin. Berlin S Karger 1926 Pp 134. M 4 80

Die Klinische Anwendung der Diathermie By Dr IWAN VON BUBEN, Assistant in the Frauenklinik of the University of Budapest With a foreword by Prof Dr BELA V KELEN, Director of the Rontgen Institute of the University of Budapest Leipzig Johann Ambrosius Barth 1926 With 85 illustrations Pp 175 M 11 40

Anleitung zur Diathermiebehandlung Second edition By Dr G BUCKY Berlin Urban and Schwarzenberg 1927 With 132 illustrations Pp 200. M 6

A GOOD impression of the extent of the therapeutic field of medical diathermy and the progress that has been made by German and Austrian specialists in the subject is conveyed by three books published in Berlin and Leipzig during the last year In all of them brief introductory accounts are given of high-frequency currents and the relevant physical principles The path and distribution of these currents in various conductors and methods of applying them to different regions of the body are described The action of the diathermy current on the body in health and in disease is shown, and the subject of dosage is considered The maladies which respond to diathermy and methods of applying the treatment are discussed under the headings of the different systems and regions of the body, surgical diathermy being less fully considered than medical diathermy Dr von Buben devotes only 22 pages to it, while the other authors give mere introductory outlines

Dr von Büben speaks highly of the value of diathermy in gynæcology, particularly in cases of chronic infection of the uterus and urethra and of the pelvic supporting tissues In the treatment of sciatica he describes a method in which three electrodes are applied respectively to the back of the hip, front of the thigh just above the knee, and to the middle of the leg These electrodes are connected to the three terminals of the diathermy machine He seems to think that better results are obtained when the whole length of the nerve is subjected to diathermy than when the treatment is applied to the regions to which the pain is referred Dr von Buben's book is clearly printed in large type and has a number of useful illustrations

Dr Laqueur's book, smaller in size and with fewer pictures, will be a useful guide to those who wish to learn the essentials of the subject The author describes some interesting experiments which h conducted in order to show the influence of diatherm on organisms introduced into the knee-joints of dog. He showed that organisms such as the cholera vibri the pneumococcus, and the gonococcus, which ar sensitive to moderate degrees of heat, were eith destroyed or rendered much less virulent aft diathermy had been applied to the joints, while th temperature reached did not damage the tissues of th host

Dr Bucky's book is an enlarged edition of a wor written as long ago as 1911 , it contains a number o useful line drawings which show the position of th electrodes for the treatment of different region Under the headings of various diseases the autho describes, in tabular form, the method of action of th diathermy, the course of the disease and the results o the treatment, the method of application of th current, and the frequency Of special interest is th so-called " alternator " devised by Dr. Bucky himself By its means the operator is able to direc the current through regions by the " cross-fire method In this way a greater degree of heat may b obtained in deep regions without undue heating of th superficial tissues Dr. Bucky also describes hi " pulsator " By means of this instrument the curren is made to oscillate intermittently The autho believes that better results can sometimes be obtaine when this instrument is used Dr Bucky cal attention to a curious and uncommon form of bur which may be caused in the subcutaneous fat whe the diathermy current is passed through the sk and superficial fascia Fat offers a much highe resistance to the current than the skin and can b damaged by a diathermy current which is insufficien to harm the skin

The books by Bucky and von Buben contain, i index form, abundant references to the literature o medical diathermy.

SCIENCE AND RELIGION

The Creator Spirit By C E RAVEN, D D Canon of Liverpool London Hopkinson an Co 1927. Pp 310 *8s 6d*

THERE have been a number of books and pape lately about science and religion This one strike us as one of the best and most helpful, especially fo those who are not very deeply trained in technica philosophy It is based on Hulsean lectures given i Cambridge, England, and Noble lectures in Cambridg Mass , and Canon Raven brings into the discussion range of knowledge in history, theology, philosophy and biology which is an admirable equipment for hi active churchmanship He adds, too, the speci qualification of being a good field naturalist, and draw many illustrations from his personal knowledge birds and moths—a line of study which brings ou clearly the problems which biology has to solve if does not do very much to solve them Broad speaking, the author is an emergent evolutionist wh rejects altogether the probability of any dualist interpretation of human experience Religion is imperfect explanation in so far as it fails to expla the fields which have been specially explored naturalists ; the scientific account of the world fa by as much as it excludes religious data Evolutio has proceeded in one continuous series from th electron, through atoms, molecules, substances, li intelligence, spirit, to the saint which is the culmin tion that we can at present apprehend , it has happen neither by luck nor cunning but by the love of Go Canon Raven assumes as axiomatic what is fund mental to the Christian position ; he states the ca against Darwinism too emphatically , the discuss comes, as it seemingly must always come, to poi which are self-evident to one mind and incompreh sible to another But the whole is a sincere and a attempt to achieve progress in a line where progr at last seems possible, and where it would be welcon by at least as many naturalists as theologians commend it heartily

But perhaps he hardly lays sufficient emphasis on the distaste for vaginal examination, shared by patient and doctor, which has a doubly injurious effect. Not only has the practitioner who relies on the patient's report only the vaguest idea of the general condition of her genital canal, but the fact that in this country at least a vaginal examination is so seldom part of a routine overhaul makes it more difficult for a doctor to insist on it without unduly alarming a patient if slight irregularities of menstrual bleeding should occur. In the discussion on Prof. EWING's paper, Dr. H. R. CHARLTON said that he had noted the number of women out-patients suffering from cervicitis who had derived no benefit from such treatment as had previously been suggested to them, and he proposed the formation of a cervical cancer committee to devise a proper therapy for the inflamed cervix, to be followed by a vigorous campaign among women in favour of "pelvic prophylaxis." This suggestion deserves serious consideration. Prof. EWING also drew the attention of dentists to the intra-oral group of cancers, and urged the need of a higher standard of buccal cleanliness. Since in spite of many formidable efforts no discovery of an effective bactericidal agent had ever been made, he advocated the regular use of soap gargles and mouth-washes. Circumcision, attention to the cleansing of the skin in those who have oily skins and heavy growths of coarse hair, the avoidance of habitual abuse of the stomach and of stagnant secretions in the breast are among the ways in which he suggests the incidence of cancer may be lessened. He is hopeful that future research will add considerably to this list, and that when other means of prevention become widely known cancer may become the eliminator of the unwary, the unintelligent, and the unfit.

It is in this direction that an optimistic outlook should be directed, for Prof. EWING's concluding remarks, quoted with approval in the course of the discussion by Prof. DEELMAN, are less cheerful in tone. These two authorities agree first that it appears more and more evident that early diagnosis alone is not capable of accomplishing the desired reduction in the death-rate, and secondly that the list of cancers incurable from their first beginnings is a long one. Prof. EWING points out that the experience of patients accomplishing a cure of early cancer is usually a severe one, while the fate of the failures is passed over in silence. The public knows these facts, and therefore any plan of squarely meeting the problem of cancer control must eventually lean heavily upon cancer prevention. Prof. CLAUDE REGAUD, who was one of the many guests to join in a warm appreciation of Prof. EWING's survey, interpreted this conclusion in the sense that it is to laboratory researches rather than to statistics and clinical observations that we must look for further progress. Pathological histology, he holds, lies at the bottom of all classifications that we make, plays a preponderant rôle in diagnosis, and has, moreover, become the indispensable guide of all those, like himself, who devote themselves to the problem of the biological action of radiations. It is gratifying to hear these views expressed by authorities whose work is done in countries where the proportion of energy and money spent on propaganda rather than research is much greater than in our own. The attitude in this matter taken up by those who direct our imperial funds and campaigns is not only well adapted to our national psychology, but is supported by workers who have the best opportunities of critically estimating the directions in which progress is to be expected.

PRACTICE ABROAD

THE General Medical Council has just issued a revised edition of the useful booklet,[1] compiled by its Registrar, Mr. NORMAN C. KING, which informs practitioners both at home and abroad what are the conditions under which they may practise in countries other than those in which they obtained their qualifications. Since 1921, when the report was last issued, the Treaty of Versailles has altered substantially the map of Europe, and with it many of the local ordinances of medical and dental practice. The formalities with which a foreign medical diplomate must comply in the various countries of the world vary from none at all up to the most onerous and exclusive rules. In the first category the Registrar has drawn up a table of countries or states in which persons may practise without a legal qualification of any sort. A close study of this table is very entertaining. Mr. KING remarks on the limited number of these countries, but the list includes Great Britain and its associated Dominions, Germany with Danzig, the Scandinavian peninsula, some of the central United States of North America, and a motley of lands at a low level of civilisation such as Abyssinia, Albania, Arabia, China, and Siam. There is no Latin country in this list, and one cannot help feeling that in many of the countries inhabitants may be well able to repel the foreign medical invader without statutory assistance. The appearance of Germany in the list will surprise some people; in that country not only is there no embargo on unqualified persons, but medical practice is as free as the author of "Rab and his Friends" could have wished it. This freedom is not new; both before and since the war foreigners with or without foreign qualification have been at liberty to practise in the Reich, provided that they do not describe themselves as physicians, surgeons, oculists, accoucheurs, and the like. An Englishman may, for example, style himself "physician legally admitted in England." There are, Mr. KING states, only a few exceptions from this rule. Although Great Britain is on the free list for medicine it has of course recently been removed from it for dentistry, and we may add, for midwifery. The very large majority, however, of the 207 countries or states named in the report prohibit unqualified persons from practice, with here and there some curious exceptions. In British Guiana they are tolerated in any district which does not possess a registered practitioner. In Ontario and in certain of the North American States osteopaths, chiropractors, and the like are allowed to practise within certain limits; in Connecticut members of these cults are not permitted to administer drugs or perform surgical operations. The Mexican Congress is on the brink of making some decision on the subject. In Colombia an unqualified person can in certain circumstances obtain permission to practise medicine but not surgery. In Ceylon native practitioners, called vedaralas, are allowed to practise for gain but practitioners of Western medicine are not allowed to do so unless they are registered, although an osteopath is left unmolested in his claim to treat diseases such as malaria if he does not write prescriptions for internal use.

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[1] Report as to the Conditions under which Medical and Dental Practitioners registered or legally qualified in their own country, may practise abroad. Sixth edition. Constable and Co., 10, Orange-street, London, W.C. 1927. 2s. 6d. (Post free U.K., 2s. 9d.; Colonies, 3s.; Abroad, 3s. 3d.)

THE PSYCHOLOGY OF CANCER CONTROL

The rather meagre reports hitherto received[1] in this country of the international cancer symposium, held at Lake Mohonk in September last under the auspices of the American Society for the Control of Cancer, are now amplified by the full proceedings These are published as an extra number of *Surgery, Gynecology, and Obstetrics*,[2] the cost being borne by the Harry M Lasker Memorial Fund It will be remembered that the conference was called for the purpose of considering the prevention and cure of cancer from a practical standpoint, and of expressing in concise language the fundamental groundwork of fact and opinion upon which the collective effort now being made in the United States and other countries for the control of cancer should be continued and extended Over 100 persons were present, and the large majority of these were not delegates but individuals invited because of their personal distinction in some aspect of cancer control Among the 16 European guests were four from Great Britain, being Mr Sampson Handley, Dr A Leitch, Dr J A Murray, F R S, and Sir John Bland-Sutton, the last named being privileged to respond to the friendly greeting extended by Prof W H Welch to the foreign guests and to give the opening address in the executive sessions

As a preliminary to further discussion, the efforts now being made in each country represented were described These accounts, given in turn by Mr Sampson Handley (England), Prof H Hartmann, Prof L Bérard, and Prof T Marie (France), Prof C Du Bois and Dr A Reverdin (Switzerland), Prof J Maisin (Belgium), Prof J Fibiger (Denmark), Prof R Bastianelli (Italy), Prof F Blumenthal and Dr R Bierich (Germany), and Mr G A Soper, Dr J C Bloodgood, Dr H C Saltzstein (U S A) make interesting reading, for they show not so much a different level of knowledge or endeavour as an appreciation, conscious or unconscious, of the psychology of various peoples and of the means whereby the desired end can be achieved without arousing phobias or public antagonism in any country Prof H T Deelman (Holland) brought this point out clearly in discussion He said that one part of Holland was populated largely by people of precise habits, with a predisposition for exact scientific data, who readily availed themselves of any medical assistance offered to them It would be undesirable to plaster their walls with warnings to consult a doctor as soon as possible after the manifestation of any given symptom, since they would soon discover that not all the cases coming as soon as possible were cured, would resent being given false hope and would develop distrust of medical science On the other hand, the inhabitants of the southern part of Holland were more careless and superficial in their mode of life, and were inclined to place faith in quacks and marvellous cures These people felt friendly to the scientific physician but had no great respect for him Here a warning to consult him as soon as possible might produce good results, because the cure of any case of cancer would make a deep impression The psychological differences between nations were also emphasised by Mr Sampson Handley at an earlier session He explained that the principal efforts made in Great Britain had been in the direction of fostering laboratory research, and that the sporadic attempts made at popular education had been on the whole ill supported, because of a general national scepticism as to their value and advisability He held that the training of the cancer specialist, the provision of facilities for consultation with him, and the education of the practitioner were likely to be the most hopeful directions of progress in this country, to the medical profession should be entrusted the duty of instructing the mass of the profession, mainly by private influence and word of mouth, in the few essential facts about cancer which are necessary for their safety The reason why publicity methods which excite attention in other more emotional peoples make little impression in this country is that our people react well to an immediate danger but not to a contingent one The English, according to Mr Handley, are not inclined to worry about the risks of life, regarding it at best as a dangerous business, when assured that one person in seven of 30 years of age or over will die of cancer they are unperturbed, reflecting that after all favourable odds of six to one are good enough in this uncertain world ! Nevertheless, Mr Handley admitted that though the British conception of cancer control was on sound evolutionary lines, it was incomplete, and that while sensation and panic-mongering must be avoided, direct popular education on cancer by lectures and leaflets must be undertaken in order to ensure that sufferers seek early advice

To this end we may do well to search the communications read at the conference to see whether any new facts were agreed on or any fresh ideas elicited From the point of view of publicity the interesting discussions on how we should regard the new theories of the origin of cancer, opened by Prof G Roussy, on the value of statistical returns, and on the mortality from cancer of various civilised and uncivilised races, are of little concern, though no serious student of cancer can ignore these pronouncements The address by Dr W S Salzstein on newspaper publicity in cancer control gives some useful hints, though again these are not all applicable in countries other than his own He quotes an analysis of the relative space given by the papers during a "cancer week" to advance notices, to the reports of meetings held by a distinguished expert, and to the scientific data accumulated during the week in the free hospital diagnostic clinics, these last being of little "news value" Dr Salzstein gives as reliable sources of information for propaganda purposes the two handbooks issued by the American Society for the Control of Cancer and Mr C P Childe's handbook on Cancer and the Public, and notes that the article read at a previous session of the symposium by Prof J Ewing on the Prevention of Cancer forms an admirable basis This address evidently impressed the conference, and, indeed, supplies a temperate and thoughtful review of the subject Prof Ewing deplores the current neglect of the prevention of cancer and points out that a rational basis for attempts at prevention lies in the fact that the major forms of the disease are due to some form of chronic irritation All types of chronic infection and irritation should be scrutinised for their possible relation to cancer, he mentions the removal of pigmented moles and the drainage of infected antrums among the precautions less generally recognised by the profession We would add to this list the treatment of endocervicitis manifested in the chronic vaginal discharge which is so frequent a symptom and so rarely the object of careful local investigation in general practice Prof Ewing does point out the danger of neglected cervical lacerations and of an interrupted healing process after these lesions and cervical erosions test, the testing of diphtheria prophylactic, and the labelling of what is a human dose , it deals also with tuberculins and tubercle vaccines, the production of all sera from living animals, and the particular provisions as to antimeningococcus serum, antidysentery sera, and diphtheria and tetanus antitoxins The Third Schedule relates to salvarsan and its derivatives, the Fourth to insulin, and the Fifth to pituitary (posterior lobe) extract There can be little doubt that the new law will not only protect the public, but will also assist the practitioner. who has hitherto been without certainty or standardisation in administering many of the substances to which the Act applies

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[1] See The Lancet, 1926, ii, 825

[2] Vol xliv, May, 1927, No 5A Publishers for Great Britain, Baillière, Tindall and Cox

The main points in which the regulations differ from those which were proposed a few weeks earlier in draft form are these. The requirement that a substance be sealed in a previously sterilised glass container before sale is relaxed where products are effectively sterilised by heat after being filled in containers There is a new Part V , relating to therapeutic substances manufactured for export only, allowing the licensing authority to dispense with the requirements of the regulations if a substance is being exported to a country where manufacture and sale are already regulated There are differences of nomenclature as to salvarsan and its derivatives Salvarsan, neosalvarsan, and sulphurosalvarsan, so named as " proper names " for labelling in the draft regulations, give way to arsenobenzene, novarsenobenzene, and sulpharsenobenzene, and the draft proposals as to silver salvarsan and neo-silver-salvarsan are changed Finally the date of operation of the regulations, which was originally proposed as August 6th next for all purposes, is varied (as already stated) by allowing a further six months' grace in respect of the regulations relating to labelling The Minister of Health announces also that he has intimated to the Association of British Chemical Manufacturers that in the initial period immediately after August 6th some latitude will be allowed so as to permit the clearance of existing stocks and to familiarise all concerned with the new requirements Constitutional purists would no doubt prefer to see the law delayed until it can be uniformly enforced, rather than to allow the Ministry to promulgate requirements with a vague intimation that the law need not at present be observed Such criticisms, however, may be waived in view of the difficulties which the Ministry experienced in getting the Act through Parliament and in view of its success in conciliating the interests affected

RHEUMATIC FEVER AS AN INFECTIOUS DISEASE

TAKING as a text A Hirsch's opinion, reached in 1864, that rheumatic fever deserves an assured place among the acute infective diseases, Dr. R M Atwater[1] has examined the mortality statistics of the United States registration area from 1900–23, and is satisfied that they afford fresh evidence of weight that " this disease is one of the communicable infections caused by a living parasite which gains access to the body from without, and which produces a disease picture in which the age, sex, seasonal, racial, and other characteristics are fixed and very close in their resemblance to the well-known epidemic diseases " Dr Atwater has made a brave attempt to extract information from data that, as he points out, obviously leave much to be desired. Frequent changes in nomenclature at uncertain dates, differences of treatment of the same data by State and Federal statistical offices, and varying precedence given to causes of death are among the difficulties with which he has had to contend Comparison with age-distribution of the mortality from rheumatic fever in England and Wales and of hospital cases in Montreal shows an excess in the proportion of deaths above 45 in the U S registration area, which suggests that many cases of chronic arthritis have been included. The excess at the older ages still existed in the latest figures quoted (1923) though to a less extent than in 1900 In spite of these defects, the U S registration area shows a consistent female excess mortality in both the white and coloured population There is also a higher mortality among the coloured than among the white, although most of the negroes live in the south where rheumatic fever is less prevalent Dr. Atwater's main argument is based on a comparison in both English and American statistics of the annual variations since 1912 in the mortality from rheumatic fever and the mortality from septicæmia, erysipelas, and puerperal septic diseases The general resemblance is closer in the data for England and Wales. From the orderliness of the sex and age curves of deaths from rheumatic fever and from their likeness to similar curves for communicable diseases—which hardly amounts to more than a restatement of the fact of orderliness—Dr. Atwater argues " a biological process going on between the host and a parasite which is affected by varying human constitution at different ages " The epidemiological facts brought out by this paper are hardly convincing enough, however, to justify his definite conclusion, quoted above, that acute rheumatic fever is one of the communicable infections caused by a living parasite which gains access to the body from without Dr. Atwater's data, like those collected in the Medical Research Council's special inquiry,[2] may be regarded as consistent with the theory of infection, but give no definite evidence that it is the true explanation of the facts

VITAMIN E.

Vitamin E, or the reproductive vitamin as it is called, has always been regarded with a degree of uncertainty, due perhaps to the prima facie improbability that there should exist a vitamin needed both by male and female for reproduction, but which does not appear to be necessary for the non-reproducing adult But just as those improbable concepts, the growth factors, have ultimately resolved themselves into dietary essentials for upkeep, as well as for growth, so perhaps the reproductive vitamin E will finally share their fate Indeed, there is some evidence already to hand that this will be the case H M Evans and his co-workers were the first to differentiate vitamin E and to describe the pathological condition to which a deficiency of it gives rise in both sexes of the rat In the female, conception takes place and gestation begins, but sooner or later the embryos die and are resorbed or sometimes aborted In the male, degeneration of the testicle takes place, which may be of varying degrees of severity, down to a complete and incurable degeneration of all the seminiferous tubules

As regards its distribution, the same workers find that vitamin E is present in a number of foodstuffs, including to a small extent butter and cod-liver oil It is abundantly present in wheat germ and its oil, as well as in lettuce, but it seems to be completely lacking in lard In wheat-germ oil the vitamin is so concentrated that a daily dose of 25 mg suffices ; the action cannot therefore be attributed to any known vitamin, such as vitamin A, which is also present to a certain extent The vitamin survives hydrogenation, as in hardened cotton-seed oil, and is regarded as fat-soluble In their last publication Evans and G O Burr suggest that there is a quantitative relation between the amount of certain fats in the diet and the amount of wheat germ which is needed to prevent sterility When 7 7 per cent of lard is incorporated in the diet 2 2 per cent of wheat germ, also incorporated is enough , but when 22 per cent of lard is used 2 6 per cent of wheat germ is not enough Butter fat does not have this effect, but it is not itself devoid of vitamin E The action cannot therefore be due simply to excessive fat intake These workers do not show, though no doubt they possess, evidence that the rats actually ate as much of the high fat diets as they

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[1] American Journal of Hygiene, May, 1927

[2] THE LANCET, March 12th, pp 552 and 562.

The next category is where the right to practise is freely granted after formal proof that the applicant's name duly appears in the Medical Register, in some cases evidence of identity and of good moral character must be added. The immense region embraced by the British Commonwealth is for the most part open to the happy possessor of an U.K. registration certificate, this makes him free of India, Australia, New Zealand, South Africa, and the eastern slopes of Canada, excluding Saskatchewan and British Columbia, which have for long required a local examination, two months ago the Province of Quebec renounced reciprocity which remains for the moment one-sided. Of foreign lands, Italy and Japan alone enjoy complete reciprocity, the arrangement made with Belgium in 1915 during the period of hostilities was not confirmed at their cessation. In all other countries the existing regulations require the holder of a medical degree to pass examinations of various extent and difficulty. In France an Arts degree is very properly a necessary preliminary to the medical degree, and foreigners receive but little exemption; in Switzerland all the examinations for the federal diploma must now be taken from matriculation onwards. What penalties are exacted for defiance is not stated by the Registrar, they probably vary much in the different countries, but at one time the Swiss Federal Authority imposed a fine of 1000 francs for the first offence and for the second the same fine with extradition to the nearest frontier. A final obstacle placed in the way of medical practice by foreigners is the requirement of naturalisation. This is the case in Austria, Poland, the Balkan countries, and a number of the North American States, and Switzerland shows signs of joining the group.

The report is a compendium of accurate and interesting information, which has accumulated gradually at the Office of the General Medical Council as a result of persistent inquiry and investigation. Even those who have no present intention of leaving the country in which their qualification is obtained might well study it in order to realise the many advantages and the occasional disabilities of their position. In the case of every country or state the name of the official is given to whom request for further information should be addressed,

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INTERNATIONAL CONGRESS OF OTO-RHINO-LARYNGOLOGY.

In the days before the war there used to be held at intervals an International Congress of Laryngology. The last pre-war meeting was held in Berlin. Since the war this congress has not been revived, although there was a very successful Congress of Otology in Paris, under the presidency of Prof. Sebileau, in 1922. We are now glad to hear that the supporters of both these congresses have combined in launching an International Congress of Oto-Rhino-Laryngology. It will be the first of its kind and should be successful for many reasons. It will be held on the neutral soil of Denmark, Prof. Schmiegelow, the doyen of the specialty in Scandinavia, is the President, and he will be supported by a strong committee who are all well-known workers and very welcome visitors to this country. Finally, Copenhagen at the end of July in 1928—the date fixed for the congress—will be looking its best and should form a delightful meeting-ground.

Annotations.

"Ne quid nimis"

THE THERAPEUTIC SUBSTANCES REGULATIONS.

Although the Therapeutic Substances Act received the Royal Assent on August 7th, 1925, Parliament provided that the statute should not operate until a date (between one and two years later) to be fixed by Order in Council. The date thus fixed was the latest possible—namely, August 6th, 1927. Meanwhile regulations have been made by the Joint Committee under the Act, which consists of the Minister of Health as Chairman, the Secretary of State for Scotland, and the Minister of Home Affairs for Northern Ireland. These regulations will not take effect till the Act operates on August 6th, indeed that part of them which deals with labelling is not to take effect till six months later still. The regulations, dated May 31st, differ in only a few particulars (to be mentioned later) from the draft proposed by the Joint Committee which was published on April 5th. The effect of the new law is that the therapeutic substances to which the Act applies are not to be manufactured for sale without a licence. Application for such licences must be made to the "licensing authority"—in England and Wales the Minister of Health, in Scotland the Scottish Board of Health, and in Northern Ireland the Minister of Home Affairs. Applicants have to satisfy the licensing authority that they will observe various conditions in respect of adequate staff, premises, and plant, proper testing facilities, the keeping of permanent records, inspection, reports, samples, &c. A therapeutic substance advertised or sold as a proprietary medicine or contained in a medicine so advertised or sold, must be labelled with its "proper name," and must not be sold or offered for sale unless sealed in a previously sterilised glass container in such a manner as to preclude the access of bacteria. The label of the container, in addition to showing the proper name of the substance—i.e., its accepted scientific name or some name descriptive of its true nature and origin—must also give the name and address of the manufacturer, the number of his licence, a distinctive batch number, the date on which the manufacture of the batch was completed, and the nature and percentage of any added antiseptic. The label must further contain, where required, statements of minimum potency and maximum toxicity, in such cases the label must specify the date up to which the substance may be expected to retain the required potency or not to develop an excessive toxicity as the case may be, and there must be a statement of the precautions necessary for preserving the properties of the contents until that date. Sale after that date is prohibited. Schedules to the regulations prescribe the standards of strength, quality, and purity in respect of the various substances. Provision is made for testing strength, quality, sterility, and freedom from abnormal toxicity, for dealing with samples, and for preparing and using media. A special clause allows a licensee to issue a therapeutic substance to registered medical practitioners in emergency though he has no filled containers in stock, but here there are careful safeguards. Part VI of the regulations deals with licences to import substances for purposes other than scientific research, Part VII deals with research licences. The latter will contain conditions as to inspection and records and as to restriction of the particular research to specified premises, which recall the conditions under which experiments on animals are permitted. Part VIII requires that containers must be labelled "to be used solely for veterinary purposes" where the substance is intended for those purposes only. The Second Schedule has minute provisions as to the production of bacterial vaccines and vaccine lymph, the use of reagents in the Schick reflexes initiated by the birth trauma The selection of a specific manifestation might then be determined, as in Dr Strauss's cases, by psychological factors capable of elucidation and resolution by analysis

VENTILATION AND TEMPERATURE

THOUGH the need for ventilation has been recognised from remote antiquity, it is only in comparatively recent times that attempts have been made to explain it scientifically First came the belief, founded on the discoveries of Black and Lavoisier, that the harmful results of overcrowding are due to lack of oxygen and accumulation of carbon dioxide This idea, plausible as it is, was generally accepted, and has proved so tenacious that it remains the foundation upon which legislation in the textile industries is based That it is erroneous has, however, been shown by many workers, from Pettenkofer onwards, and a recent review[1] of the literature of this subject shows how far advance has been made No longer—apart from escape of poisonous fumes—is importance attached to the chemical composition of the air, measured as excess of carbon dioxide or diminution in oxygen, and no longer is it held that ill-effects arise from absorption by the lungs, to which attention was first directed by the alterations in breathing which are observed when ventilation is insufficient The organ concerned, it is now recognised, is the skin, acting through the heat-regulating mechanism of the body Hence study has been concentrated, not on the chemical composition of the air, but on its physical characteristics expressed in terms of temperature, humidity, and movement Comfort, health, and capacity for activity are found to depend largely upon the proper balance between the heat produced by the body within and that which is lost from the skin, any retardation of heat loss causes discomfort and depression, and finally physiological derangement As temperature rises humidity becomes of increasing importance, because the body, unable to get rid of heat fast enough by convection and radiation, has to rely more and more upon evaporation by means of the sweat glands At high temperatures, in fact, the body behaves rather like a wet-bulb thermometer and the figure registered by this type of instrument gives a fair idea of the conditions with which it has to cope The more moisture the air contains the less it can remove by evaporation from the skin, and when the wet-bulb registers more than 80° F work must cease or heat will be generated faster than it is lost When 90° F is reached on the wet-bulb the body will be unable to get rid of the heat produced in the processes needed to carry on life, and its temperature will rise until heat-stroke occurs Movement of the air, by favouring evaporation, is generally beneficial at high temperatures, but when the air is warmer than the body it becomes disadvantageous, since the air now warms by contact more than it cools by evaporation At low temperatures the wet-bulb loses its significance in favour of the dry bulb, because evaporation is not the important means by which heat is dissipated and the sweat glands are not in action

Much attention has been paid to the influence of high temperatures, and the influence of cold has also been studied, though less intensively, as it is easier by exercise or external means to maintain bodily warmth But what is specially interesting is the determination of an optimum temperature A constant environment produces, of course, a feeling of stagnation and lacks the power to stimulate It is found, however, that, on the whole, human activity, measured by industrial output, is at its best at temperatures ranging round 65° F At this figure there are fewest accidents and least sickness, metabolism is at its lowest and comfort is maximal The adverse influence of a rise of temperature is found to be greater for each degree of rise than for each degree of fall The importance of these facts in industry can hardly be exaggerated, for it is usually possible to regulate environmental heat by ventilation or refrigeration In time to come, domestic and business houses may have a cooling system for the summer, as they now have a heating system for winter

Efforts are being made to provide the hygienist with devices for estimating the efficiency of ventilation At present two are under close investigation—namely, Dr Leonard Hill's kata-thermometer, which records the cooling power of air, and an effective temperature index which comes from United States These are based on the same fundamental principles and entire agreement has not yet been reached as to which is the more useful Possibly each has advantages in its country of origin owing to differences in climatic conditions The kata-thermometer is likely to be used in this country until, if ever, an effective temperature index is worked out experimentally here

THE WILKINS COMMITTEE

THE Society of Superintendents of Tuberculosis Institutions has appointed a subcommittee to deal with the after-care of cases leaving these institutions, and also to afford opportunity for superintendents and others to acquire information about candidates suitable for posts as they fall vacant The members of the Society were, we understand, actuated by the feeling that more effort should be made to induce such institutions to employ tuberculous persons on their staff It has been found that, being conversant with the daily routine and the accepted line of treatment, they do excellent work and are in general a desirable category of servant Bringing together would-be employers and those requiring employment should therefore play a helpful part in the after-care of tuberculous patients Those who have employed such ex-patients at sanatoriums realise the feeling of relief with which they do their work, knowing they are safe and sheltered At Nayland at the present time 64 out of 150 members of the staff are ex-patients, their number makes it possible to select some of the staff from the point of view of character as well as of health—a matter of real gain Ex-patients are found suitable for all posts except the heads of departments, where work must sometimes be done under pressure unsuitable for tuberculous people The committee, which is called after the late Dr A G Wilkins who originated the idea, is making a beginning with tuberculous people, but hopes to extend its efforts later to include cripples from rheumatism and heart disease, and convalescent mental cases In the first instance the scheme is to be solely in medical hands, but later on employers of labour and other interested persons will be asked to join the committee For the present, lists of vacant posts will be prepared at intervals and circulated Dr Jane Walker is chairman of the committee, and will supply information from its temporary office at 122, Harley-street, London, W 1

THE GRACILIS MUSCLE AS SPHINCTER

WE commented last year[1] on a case in which the gracilis muscle had been used to encircle the female urethra and restore urinary control Drs L P. Player and C L Callander now report[2] a case in which they used this technique with success in a man who suffered from urinary incontinence after suprapubic prostatectomy The patient was readmitted to hospital eight months after the removal of his prostate to teach him control and to clear up a bladder infection Two surgical attempts to repair the internal sphincter resulted in sloughing of the tissues and a worse state of incontinence than before Two and a half years after his first operation he was admitted to hospital again and Deming's operation was performed. The authors describe their technique in detail The gracilis muscle was severed at the level of the internal condyle of the femur, freed up to the entry of its nerve- and blood-supply, and then tunnelled under a did of the lower ones, their calorie needs would be supplied by smaller amounts of the former, and if their consumption of food were consequently lowered their intake of wheat germ would be correspondingly reduced V E Nelson and his co-workers do not consider that the evidence for the existence of vitamin E is adequate, but J C Drummond states that work has been done in his laboratory which fully confirms Evans's work as to the existence of vitamin E E V McCollum and his co-workers not only accept the existence of vitamin E, but they also make an interesting suggestion as to its possible function They have been troubled for a considerable time by the appearance, among their experimental rats, of an ophthalmia which they feel cannot be due to any lack of vitamin A At one time they attributed the eye trouble to some error in the salt mixture and called it a salt ophthalmia In a paper published this year they correlate the ophthalmia with the death of fœtuses on a diet deficient in vitamin E, and regard both as due to an iron insufficiency They ascribe to vitamin E a function with regard to iron assimilation and state that, on the diet which they use, the ophthalmia and sterility produced by it can be cured either by adding vitamin E or by substituting ferric citrate for the ferrous sulphate previously used If these results are confirmed, vitamin E takes its place with the other vitamins as a dietary constituent, vital for growth and maintenance

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[1] Review of literature on the Physiological Effects of Abnormal Temperatures and Humidities R R Sayers and S J Davenport Public Health Reports of the United States Public Health Service, April 8th, p 933

[1] THE LANCET, 1926, i 873

[2] Jour Amer Med Assoc, March 26th, 1927

There is at present little evidence that lack of vitamin E is an important ætiological factor in human disease, but Prof E Poulsson, of Oslo, has published an interesting case An apparently healthy woman, after bearing a normal child followed by a weakly one, had five successive pregnancies in which the child perished just before full term For the next two pregnancies cod-liver oil was administered liberally and a healthy child resulted in each instance Whatever may be the lesson to be drawn from this case, cod-liver oil cannot be regarded as a rich source of vitamin E, but Prof Poulsson suggests its administration in cases of habitual and unexplained abortion

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THE DETERMINATION OF SULPHUR DIOXIDE IN FOOD

THE Ministry of Health has decided what foods and articles used in the preparation of food may contain preservatives, and the kinds and amounts of these tolerated substances which may be allowed This in itself is a task requiring knowledge and discretion It is, however, one thing to fix a standard or limit and another to enforce it The quantities allowed are in all cases small, and it is not always easy to determine whether an excess has been added Sulphur dioxide is volatile, easily oxidised to sulphuric acid, and forms, with many substances likely to occur in foods, condensation products which are non-volatile and fairly stable The most obvious means of determination is conversion, by oxidation, into sulphate Here alternatives are possible, either the amount of oxidising agent required may be determined or the sulphate ions when formed may be either precipitated and weighed as barium sulphate or titrated acidimetrically The former process can be carried out volumetrically, the gravimetric one requires more time and skill Since, however, 1 part of SO_2 yields about 3 6 parts of $BaSO_4$ it has some advantages If it were merely a matter of determination of SO_2 in clean aqueous solutions the choice of method would be merely a matter of convenience The actual substances dealt with in an analytical laboratory do not always present the clear-cut case which is possible in an educational institution, and foods contain various interfering constituents Since almost all foods contain substances which will react with the usual oxidising agents and few are free from either sulphur compounds which will yield sulphates or from sulphates themselves, it is usually necessary to take advantage of the volatility of sulphur dioxide in order to obtain a clean, sulphate-free liquid. The ease with which sulphur dioxide forms condensation compounds renders something more than simple distillation necessary, whilst its easy oxidisability points to the need of distillation away from air

A great deal of research, not all of the most convincing kind, has been done on this matter in this country and abroad A monograph by Dr G W Monier-Williams, issued by the Ministry of Health, contains a bibliography of over 100 papers devoted to sulphur dioxide in foods The Ministry and Dr. Monier-Williams must be congratulated on having avoided the mind-destroying pitfall of standard methods There are, it must be admitted, some cases where the substance to be determined, although physically or physiologically definite, is not well characterised chemically or its characteristic forms or compounds are difficult to separate quantitatively or to deal with when separated In such cases a standard method is necessary in order that comparable results may be obtained by different workers In other cases the standard method is a sop to intellectual indolence Critical investigation of the work of others and some well thought-out experimental work has enabled Dr Monier-Williams to evolve a method of general application in which distillation with hydrochloric acid, in preference to the frequently used phosphoric acid, and oxidation of the SO_2 in the distillate with hydrogen peroxide overcomes some of the difficulties in the way of exact work The means used to verify the accuracy of the method are described Some interesting results showing the very small effect which the sulphur in gas used for heating has on liquids digested over gas flames are given It appears that those who are called upon to examine foods for this preservative may feel a reasonable certainty as to the accuracy of their work if they will pay due regard to the facts set forth in the report This is matter for congratulation, as both commerce and the public interest may suffer if new enactments are found to be applicable only on a highly speculative basis

BIRTH TRAUMA AS PROTOTYPE OF FEAR.

IN a letter which we publish in another column a San Francisco correspondent refers to the importance of the trauma of birth in the mental development of the human child The view that the physical reactions produced by the trauma of birth may stand as a prototype of the emotion of fear has been, as our correspondent points out, reached by the psycho-analytic route Erasmus Darwin expressed an almost identical view in 1794, when he wrote[1] —

> As soon as the young animal is born, the first important sensations that occur to him are occasioned by the oppression about his precordia for want of respiration, and by his sudden transition from ninety-eight degrees of heat into so cold a climate He trembles, that is, he exerts alternately all the muscles of his body, to enfranchise himself from the oppression about his bosom, and begins to breathe with frequent and short respirations, at the same time the cold contracts his red skin, gradually turning it pale, the contents of the bladder and of the bowels are evacuated and from the experience of these first disagreeable sensations the passion of fear is excited, which is no other than the expectation of disagreeable sensations This early association of motions and sensations persists throughout life, the passion of fear produces a cold and pale skin, with tremblings, quick respiration, and an evacuation of the bladder and bowels, and this constitutes the natural or universal language of this passion

If these views are valid, the bodily manifestations of fear can be regarded physiologically as conditioned allowed to stain the pillows and sheets In septic cases sleep is essential and to produce it, to stimulate the appetite and to improve the condition of the patient generally, nothing is better than open-air treatment—even in winter.

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[1] Zoonomia, vol i, Section xvi, p 148

In toxic cases the usual methods must be adopted to get the rash out and salines may be given either rectally, subcutaneously, or intravenously, but the patient often fights against all such endeavours to assist him Stimulants such as whisky or brandy are given and hypodermic injections of camphor in oil or—better still—caffeine-sodio-salicylate. Unfortunately, the outlook in toxic cases is extremely bad Vaccines have been tried, especially for septic cases but have not proved of much use; neither have injections of polyvalent serum been very successful either in septic or toxic cases, except in a few instances where the particular serum seemed to suit the patient and given in large doses of 100 to 150 c cm. In toxic cases the administration of the whole blood of a convalescent scarlet fever patient —as recommended by Zingher—has been of great benefit but this form of treatment too, has often been disappointing It is certainly worth trying; 100 c cm at least of the donor's blood is withdrawn rapidly in sterile syringes which have been immersed in 1 per cent sodium citrate solution, and injected intramuscularly into the thigh of the patient In favourable cases there is—following the injection—a fall of temperature and pulse-rate and the patient rapidly improves

Scarlet Antitoxin Treatment.

Evidence is increasing that scarlet antitoxin when injected early enough and in sufficient dosage blanches the rash lowers the temperature and improves the general condition of the patient, so shortening the disease and lessening the likelihood of complications. The most marked benefit is seen in the restless semi-delirious patient of the toxic type—the antitoxin apparently neutralising the toxæmia. In the septic case improvement often follows the injection of the antitoxin though complications may still result—especially if the serum is not given sufficiently early. In many patients the antitoxin apparently lessens the subsequent desquamation, but in others this is not so, probably because the serum is given too late Concentrated scarlet antitoxin should be given intramuscularly in doses of 10 to 40 c cm, or more to moderately severe cases In mild cases 10 c cm is probably sufficient, but large amounts must be given in toxic cases and preferably intravenously, if possible, failing this intramuscularly into the outer aspect of the thigh. Concentrated antitoxin is better than unconcentrated serum as there will be less risk of serum reactions following in the shape of rashes which are sometimes accompanied by slight temperature, the rashes are mainly urticarial in type.

The Care of the Patient during Convalescence

Otitis media should be treated with fomentations which are soothing and often hasten discharge from the ear Paracentesis should not be delayed if it seems likely to be called for. *Otorrhœa* requires gentle douching with warm boric lotion or hydrogen peroxide —many prefer merely to mop up the discharge and consider douching or syringing dangerous A *superficial mastoid abscess* requires a simple incision right through the periosteum, but if the mastoid cells are involved a more radical operation is called for. *Rhinitis* is treated on general lines If it is due, as it often is, to a K L.B infection, 1500 units of antitoxin will dry up the rhinorrhœa. If the otorrhœa or rhinitis continue and tend to become chronic, then the removal of the tonsils and adenoids is the only thing to do and often clears up the discharges *Adenitis* is treated by fomentation and, if necessary by an incision where the abscess, which sometimes results, is ripe *Arthritis* seldom requires treatment other than warmth to the parts, unless suppuration occurs when drainage is necessary *Nephritis* is treated in the usual way by promoting diaphoresis and keeping the bowels well open with Epsom salts or jalap (dose 30–60 g) If convulsions occur, blood-letting should be performed The urine especially during the nephritic period (sixteenth to twenty-sixth day) requires to be examined daily as there is always the danger of a sudden toxic nephritis occurring. Only a trace of albumin may be found in routine examination, but the patient may die suddenly in a few hours with a high temperature Slight adenitis often precedes nephritis and vomiting is a danger-signal The majority of cases of nephritis recover if treatment is early and prompt and chronic nephritis is rare A Osman and H Carter have recently suggested the administration of alkalies as a prophylactic against this complication

The Dick Test and the Schultz-Charlton Reaction in Scarlet Fever.

The majority of patients suffering from scarlet fever give a positive Dick test if the test is performed during the height of the rash This is replaced by a negative reaction during convalescence, the antitoxin produced during the disease being apparently specific for the toxins of the *Streptococcus hæmolyticus* The serum of a convalescent or scarlet antitoxin if injected intracutaneously at the height of the rash is capable of neutralising the toxin in the skin, and blanching occurs, giving a positive Schultz-Charlton reaction If, on the other hand, an individual with a rash shows a negative Dick test and a negative Schulz-Charlton reaction then the rash is not likely to be one of scarlet fever, neither will it be due to scarlet fever if with a negative Schultz-Charlton reaction a positive Dick test is shown right from the beginning of the illness to the end of convalescence The serum of such an individual, too will not blanch a definite scarlet rash

The Dick test shows that about 60 per cent of children between 1 and 5 years, and 35 per cent between 5 and 10 years are susceptible to scarlet fever. Nurses in fever hospitals who are Dick-positive reactors should be actively immunised against scarlet fever, and the time will undoubtedly come when large numbers of children too will have to be protected Scarlet fever antitoxin can confer a passive immunity lasting only a few weeks but an active immunity lasting for 18 months to three years at least, may result from injections of increasing amounts of the toxin of the streptococcus of scarlet fever A total injection of 20 000 skin test doses is recommended, beginning with one of 250 such doses Children under 5 years of age should be immunised against both scarlet fever and diphtheria without any preliminary Dick and Schick tests but after 5 years such tests are necessary to pick out the positive reactors

The Schick Test and Diphtheria in Scarlet Fever.

If a patient during the time of the rash in scarlet fever has a faucial lesion suggestively diphtheritic and shows a positive Schick test then it is wise to administer diphtheria antitoxin If on the other hand, a negative Schick reaction occurs, the faucial lesion is almost certainly septic in nature, even though it involves the uvula. Even if diphtheria antitoxin is administered at the same time as the Schick test is performed, a negative reaction may be taken as showing that the patient is not suffering from concurrent diphtheria, and is really immune to that disease. If during the convalescence of scarlet fever a patient develops speckling or patching on the tonsils and that individual is a Schick positive reactor, then it is wise to administer a small dose of diphtheria antitoxin which can be repeated if necessary. A negative reactor with speckling or patching on the tonsils may safely be left alone. If tonsils and adenoids have to be removed for any reason during the convalescence of scarlet fever 1500 units of antitoxin should always be injected to confer a passive immunity if the individual is a positive reactor to the Schick test. On the other hand, if the patient is known to give a negative Schick reaction no diphtheria antitoxin is necessary, and anything developing later on the fauces may be regarded as merely septic.

JOHN McGARRITY, M.D. Edin, D P.H Edin & Glasg.,
Resident Medical Superintendent, Isolation Hospital, Cardiff

bridge of intact skin to the perineum It was sutured with catgut to the corpora cavernosa, the free end being rolled over the corpus cavernosum urethræ and stitched to itself The catheter and sutures were removed a week after operation and the patient then declared that he could control his bladder, and woke up to pass urine for the first time since his first operation A month later he was able to control urine while in bed but leaked a little when up and about For this reason the wound was reopened and, as anticipated, the gracilis was found to be loosely rolled round the corpus cavernosum owing to absorption of the stitches uniting it to the corpora cavernosa The loop was tightened up, after which he regained complete control in proportion to his physical energy When very tired he sometimes has to lie down to regain control In a man of 66 this result is gratifying Cystoscopy on several occasions has shown that there is no residual urine and that there is distinct voluntary contraction in the transplanted muscle So great is this power that the orderly was unable to remove a No 16 soft rubber catheter until the muscle relaxed It appears that Deming's technique will prove satisfactory for these very trying cases; if it does its inventor will have saved a great deal of distress and inconvenience to the unfortunate sufferers from otherwise incurable incontinence

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A CONFERENCE ON GOITRE.

THE stream of published reports from many parts of the world shows that an immense number of workers are trying to throw light on the ætiology of endemic goitre, and are seeking means of preventing the disease The investigations and experiments made in Switzerland have been the starting-point of much of this research, and it is fitting that an invitation should come from that country to an international congress, where opinions may be ventilated The idea of such a conference was first put forward in 1923 by the directors of the surgical clinics of Basle and Berne, Prof G Hotz and Prof F de Quervain The project could not be realised at once, but difficulties have now been overcome, and the Swiss Goitre Commission, having sent invitations to a number of foreign authorities, has arranged for the conference to be held at Berne from August 24th to 26th of this year It will not be a general congress, but is called "a simple meeting of men of science who have made researches connected with the study of the problems of goitre" Amongst those who are to take part are Prof L Aschoff (Freiburg i/B), Prof C Wegelin (Berne), Dr David Marine (New York), Prof H S Plummer (Rochester, U S A), Prof Eiselsberg (Vienna), Prof F de Quervain (Berne), Prof L Berard (Lyons), Lieut-Colonel R McCarrison (I M S), Prof B Galli-Valerio (Lausanne), Dr E Bircher (Aarau), Prof J. Wagner-Jauregg (Vienna), Dr Muggia (Sondrio), and Prof. W Silberschmidt (Zürich) On August 27th Prof de Quervain will give a demonstration at the surgical clinic The President of the Swiss Goitre Commission is Dr H Carrière, and the congress will be held at the University of Berne

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AFTER the death of Sir William Macewen, professor of surgery in the University of Glasgow from 1892 to 1924, a committee was formed to raise a fund to commemorate his life and work The first purpose of the fund was to present a bust to the University, a replica being given to Lady Macewen The second purpose was the establishment of a Macewen memorial lecture, and the third the foundation of a Macewen Medal in the class of surgery The busts have been presented and the first award of the medal has been made The first memorial lecture is to be delivered by Prof Harvey Cushing, C B, M D, of Harvard University, in the Zoological Lecture Theatre of the University on Tuesday, June 21st, at 3 P M The lecture will be open to past and present students of medicine and to others who may be interested Subscribers to the Foundation Fund are specially invited.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CCXXVIII.

THE TREATMENT OF SCARLET FEVER

WHETHER the patient is isolated in hospital or at home, the general lines of treatment are the same The room must be well ventilated with as much light as possible A warm, stuffy room is bad, and, as long as the patient is warm in bed, conditions approaching open-air treatment are best—especially in septic cases Daily tepid sponging with soap and water is necessary while the patient is in bed During convalescence warm baths may be taken The bowels must be attended to; an enema the first day or so, as long as there is a temperature, and then simple aperients. At the time of the rash the patient must be comfortably warm in bed—preferably among blankets—and should have a soft woollen garment next the skin A couple of hot-water bottles are usually sufficient, but more may be necessary if the rash is not coming out well and is poor in colour. If this is not sufficient hot packs or mustard packs may be given to bring the rash out and a little ice to the head if the temperature rises above 104° F Whisky is useful in sharp cases as a stimulant, or brandy if the patient is sick Sleep is important, and this may be induced by tepid sponging and warm drinks such as toddy If this is not enough a little bromide or paraldehyde may be given The paraldehyde is best given by the rectum Morphia may be needed if the patient is very restless, but it is not always well borne At the end of three weeks the patient is allowed to sit up wrapped in blankets for a few days before being dressed. The risk of the individual catching cold must not be forgotten Drugs play a small part in the treatment of scarlet fever Diaphoretics are really unnecessary and the Milne treatment has now been given up

Diet

Milk is sufficient at first After the temperature falls give porridge, milk puddings, &c, and later fish; after about three weeks increase to an ordinary diet In septic cases the diet must be such as to maintain the strength of the patient In nephritis it is best to restrict the diet to milk or arrowroot &c, with occasionally some stewed fruit and cream Fluids should be given freely in all cases of scarlet fever

The Care of the Mouth, Nose, and Throat

In ordinary simple cases of scarlet fever in an adult a mild antiseptic gargle is sufficient A teaspoonful of liq thymol co in a glass of warm water is a pleasant mouth-wash and gargle The child requires a little more care, as it is unable to attend to the toilet of the mouth itself The throat may be left alone, but the tongue and mucous membranes should be thoroughly cleansed with swabs of cotton-wool dipped in a mild antiseptic solution such as thymol solution, using a swab-holder or the index-finger sheathed in a thin layer of cotton-wool The mucous membranes may then be swabbed over again in the same way with a solution of boroglycerine Finally, the tongue and lips are anointed with a mixture of boric ointment and vaseline flavoured with peppermint to keep them moist and soft Ill patients, whether adults or children, should have the toilet of the mouth thus attended to after feeds.

Septic and Toxic Cases

If the case is a septic one, with profuse nasal discharge and patching on the tonsils, the nose and throat may be gently irrigated or sprayed with mild lotions such as boric lotion, eusol, thymol, or normal saline Actual swabbing of the fauces is sometimes necessary, but in a restless patient this form of local treatment is probably unwise The discharge from the nose should be mopped up and not

I should thereby obtain the real ascending force of the sap in that stem, which succeeded according to my expectation and hence it is, that I have been insensibly led on to make farther and farther researches by variety of experiments "

Applying this method, he found the sap pressure in the vine in the bleeding season to be "five times greater than the force of the blood in the great crural artery of a horse, seven times greater than the force of the blood in the like artery of a dog, and eight times greater than the blood's force in the same artery of a fallow doe "

THE REVD STEPHEN HALES, D D,

Clark of the Closet to Her Royal Highness the Princess Dowager of Wales —F R S and Member of the Academies of Sciences at Paris and Bologna Aged 82

(From the mezzotint by McArdell after the portrait by Thomas Hudson in the National Portrait Gallery)

In the field of physiological botany Hales was certainly a pioneer, as he made the first proper scientific investigation of the flow of sap in plants and trees As in the case of his work on the circulation, this study was not only qualitative but also quantitative He measured the rate of transpiration of water from unit surface area of leaves, the rate of absorption of water by unit area of root surface, and calculated the rate of flow of sap along the stem and branches He compared the "perspiration rate" per unit area of surface of the sunflower with that of man He measured the sap pressure in stems with, and in stems without, their leaves and branches Finding that the sap pressure was upwards under all circumstances, he argued against the current theory of a circulation of the sap, and attributed its elevation to transpiration by the leaves, aided at certain seasons by a force exerted by the roots Of this work he wrote, "I have been careful in making, and faithful in relating, the results of these experiments, and wish I could be as happy in drawing the proper inferences from them" But his theory is now regarded as correct in its main essentials

Hales also invented the present-day method of studying the growth of plants, that of marking stems and leaves at equal intervals These experiments of his are of particular interest as they led him to perform a fundamental experiment on the growth of the bone "The wetter the season," he wrote, "the longer and larger shoots do vegetables usually make, because their soft ductile parts do then continue longer in a moist tender state but in a dry season the fibres soon harden, and stop the further growth of the shoot " Then surely a triumph of reasoning in comparative physiology, as the truth of his prediction was established by his subsequent experiment, which was as follows —

"As in vegetables, so doubtless in animals, the tender ductile bones of young animals are gradually increased in every part that is not hardened and ossified, but since it was inconsistent with the motions of the joints to have the ends of the bones soft and ductile, as in vegetables, therefore nature makes a wonderful provision for this at the glutinous serrated joining of the heads to the shanks of the bones, which jointing, while it continues ductile, the animal grows, but when it ossifies, then the animal can no longer grow as I was assured by the following experiment—viz, I took a half-grown *chick*, whose leg-bone was then two inches long, with a sharp-pointed iron, at half an inch distance, I pierced two small holes through the middle of the scaly covering of the leg and shin-bone, two months after I killed the *chick*, and upon laying the bone bare, I found on it obscure remains of the two marks I had made at the same distance of half an inch so that that part of the bone had not at all distended lengthwise, since the time that I had marked it, notwithstanding the bone was in that time grown an inch more in length, which growth was *mostly at the upper end of the bone, where a* wonderful provision is made for its growth at the joining of its head to the shank, called by anatomists *symphysis* "

This experiment, usually attributed to John Hunter born in 1728, was actually performed by Hales some years before that date His researches were soon to receive the recognition they deserved In 1718 he was elected a Fellow of the Royal Society on the same day as the friend and companion of his Cambridge days, William Stukely

His Religion

It may seem remarkable that scientific work like this should have been performed by a country parson

Special Articles.

STEPHEN HALES, D.D., F.R.S.,

PHYSIOLOGIST AND BOTANIST, 1677–1761

A Dissertation delivered at Corpus Christi College, Cambridge, on June 16th, 1927,

BY A. E. CLARK-KENNEDY, M.D., M.R.C.P.,
FELLOW OF THE COLLEGE; ASSISTANT DIRECTOR OF THE MEDICAL UNIT, THE LONDON HOSPITAL

Stephen Hales, a grandson of Sir Robert Hales was born at Bekesbourne in Kent on Sept. 17th, 1677. Sir Robert's eldest son, Thomas, had married Mary, heiress of Richard Wood, of Abbots Langley in Hertfordshire; Stephen was their sixth son. Having been properly instructed in "grammar learning," he was sent up to Cambridge and admitted a pensioner of this College in 1696. Intended for the Church, he studied divinity. Taking the degree of Master of Arts in 1703, he was ordained and elected a Fellow of the College in the same year. Just after Hales had been elected to his Fellowship, William Stukely came, as a scholar, to Bene't College. Stukely, an enthusiastic naturalist, made physic his principal study, to become a Fellow of the College of Physicians and well known as an antiquary in after life. With this undergraduate, some years his junior, Hales formed an intimate friendship. Together they rambled over "Gog-Magog hills and Cherry-Hunt-Moor," collecting "simples," hunting for fossils in the chalk pits, and catching butterflies, "having contrived an instrument for taking them." Together they studied anatomy, dissecting dogs and other animals. They also attended the public lectures that Vigani, first professor of chemistry, gave in the "Cloysters" at Queen's College, and went to see "chymical" experiments he performed in the room over the gateway at Trinity, which had been the laboratory of Sir Isaac Newton. Hales also applied himself to astronomy, and having acquired a "perfect knowledge of the Newtonian system," invented a mechanical model to demonstrate the movements of the planets.

In 1709 Hales was appointed Minister of Teddington in the county of Middlesex. Soon after he commenced a long series of researches on the physiology of plants and animals. By nature Hales was always a biologist, but at Cambridge he had been well grounded in the Newtonian physics and astronomy of his day. There, too, to good purpose, he had attended Vigani's lectures, and repeated many of Robert Boyle's experiments, learning the value of the experimental method. "Though we can never hope to attain," he wrote, "to the complete knowledge of the texture, or constituent frame and nature of bodies, yet may we reasonably expect by this method of experiments, to make farther and farther advances abundantly sufficient to reward our pains. And though this method be tedious, yet our abilities can proceed no faster; for as the learned author of the 'Procedure of Human Understanding' observes:—

> 'All the real true knowledge we have of nature is intirely experimental, insomuch that, how strange soever the assertion seems, we may lay this down as the first fundamental unerring rule in physics, *That it is not within the compass of human understanding to assign a purely speculative reason for any one phenomenon in nature.*'

So that in natural philosophy we cannot depend on any mere speculations of the mind; we can only with the mathematicians, reason with any tolerable certainty from proper data, such as arise from the united testimony of many good and credible experiments."

Hales therefore applied the experimental method, and quantitative methods in particular, to the study of biology, as rigidly as Newton, Boyle, and others had used it in the elucidation of the laws of physics and chemistry. Harvey had inferred the circulation of the blood from anatomical observation and then confirmed it by experiments on living animals. Hales proceeded differently. From the start he applied his knowledge of physics and mechanics to the problems of physiology. Thus, not only did he become a great experimental biologist, but one of the outstanding figures in the foundation of the mechanistic physiology of to-day.

His Work on the Circulation.

To Hales, primarily a biologist, but trained as a physicist, the circulation of the blood, discovered rather less than a century before him, must have presented a fascinating study. It is therefore not surprising that his first scientific endeavour was to make a complete quantitative investigation of the dynamics of the circulation. "Since we are assured," he wrote, "that the animal fluids move by *hydraulic* and *hydrostatical* laws, the likeliest way therefore to succeed in our inquiries into the nature of their motions, is by adapting our experiments to those laws." He therefore devised his "hæmastatical" method, which consisted of the application of the principle of the manometer to animal physiology, and performed a vast number of vivisection experiments of great technical difficulty, not in a well-equipped laboratory, but in the parsonage at Teddington in pre-anæsthetic days! By tying tubes into the arteries and veins of living animals he was the first man to record the blood pressure. In so doing, not only did he advance our knowledge of cardiovascular physiology by a definite and important step, but at the same time laid the foundation of an important clinical method in the study and diagnosis of disease. For this performance Hales is justly famous. But, in addition, he investigated almost all the mechanical aspects of the circulation, and made a more complete study of cardio-dynamics than even Lower had done before him. His description of this branch of physiology is so complete and quantitative, so essentially modern in all its tendencies that it reads like a chapter in a present-day text-book. By recording the pulse-rate during life, and then injecting the heart with wax, he computed the circulation rate in horses, cattle, deer, and dogs. He showed that in large animals the blood flow is relatively less than in small, but, in the absence of a true conception of respiration and metabolism, he failed to realise the significance of this result. He estimated the actual velocity of the blood stream in the different arteries and veins. He measured the velocity of the blood in the tissue capillaries by observation with a microscope, and compared it with indirect calculations of the velocity of the blood in those of the lungs. Studying blood flow in the tissues, he estimated the capillary blood pressure, and demonstrated vaso-constriction by cold, vaso-dilatation by heat. Lastly, by pointing out that the heart responds to increased venous return by increased systolic output, he laid the foundation of the conception now known as "Starling's Law."

His Work on the Physiology of Plants.

Hales was essentially a comparative physiologist. He alternated between experiments on plants and experiments on animals. Observations on the physiology of plants suggested corresponding experiments on animals. Observations on animals suggested corresponding experiments on the physiology of plants.

> "About twenty years since," he writes, "I made several hæmastatical experiments on dogs, in order to find out the real force of the blood in the arteries; at which times I wished I could have made the like experiments to discover the force of the sap in vegetables; but dispaired of ever effecting it, till by mere accident I hit upon it, while I was endeavouring to stop the bleeding *of an old stem of a vine,* which was cut too near the bleeding *season,* which I feared might kill it. Having tied a piece of bladder over the transverse cut of the stem, I found the force of *the sap did* greatly distend the bladder; whence I concluded, that if a long glass tube were fixed there in *the same manner,* as I had before done to the arteries *of several living* animals

clusion that "air" enters into the constitution of plants, and that an important function of the leaves was absorption of this form of nourishment "It is by this amphibious property of air," he wrote, "that the main and principal operations of nature are carried on", and then this significant sentence "May not light also, by freely entering the expanded surfaces of leaves and flowers, contribute much to the ennobling the principles of vegetables?" As Michael Foster pointed out, Hales was the first man to give a clear enunciation of the existence of gases in both a combined and a free state

True to his comparative physiology again, from absorption of air by plants he turned his attention to respiration in man After performing a number of experiments on combustion without much success, he repeated Mayow's experiment on the respiration of animals Mayow had shown that animals absorb a part of the air they breathe, but Hales carried things a step further, when he came to the conclusion that respiration in some way modifies the properties of the air left over so as to make it unfit for life and for combustion Thus he was led to experiment on himself, and to perform the first re-breathing experiment Taking a well-softened bladder, and closing his nostrils, he proceeded to breathe in and out of it "In less than half a minute," he wrote, "I found a considerable difficulty in breathing, and was forced after that to fetch my breath very fast, and at the end of the minute, the suffocating uneasiness was so great, that I was forced to take away the bladder from my mouth" Then, in an attempt to find "some means to qualify and rebate the deadly noxious quality of these (expired) vapours," he constructed a more complicated form of re-breathing apparatus with inspiratory and expiratory valves, so arranged that his expired air had to pass through diaphragms of cloth before being inspired again. He could re-breathe the air contained in this apparatus for one and a half minutes only when there were no diaphragms When, however, these were moistened with a solution of "sal tartar," and then replaced, re-breathing could be continued for five to eight minutes Moreover, the diaphragms increased in weight to a greater extent than he could account for by absorption of water only! If Mayow can be said to have discovered oxygen, surely Hales described carbon dioxide! Throughout Hales's writings there is no mention of the phlogiston theory By this silent refusal to follow Stahl, he kept alive the spark of truth that Mayow had lit, to be rekindled more than a century later by Black, Priestly, and Lavoisier It is almost impossible to conceive of the perspective of Hales's outlook on these problems But if only he had followed Mayow a little more literally, and conceived, as he had, of different kinds of gases, instead of one "air" with variable properties, he might well have arrived at a true conception of respiration Be this as it may, Hales's researches had a great practical outcome in his work on ventilation

Prince Frederick of Wales was in the habit of paying him visits in his laboratory at Teddington to see these curious experiments in which he was almost constantly engaged The Princess of Wales, mother of George III, also had considerable regard for him, and through her influence he was appointed a Canon of Windsor by the King

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Later, however, he accepted the appointments of Clark of the Closet to the Princess Dowager, and Chaplain to the young Prince, her son

His Temperance Campaign

In the early part of the eighteenth century the introduction of gin had given a new impetus to drunkenness In the streets of London gin-shops invited passers-by to get drunk for a penny, dead drunk for twopence Hales was not a "teetotaler" in the modern sense, indeed, he advocated the drinking of wine But against this growing social evil he launched a vigorous campaign, when in 1734 he published an anonymous pamphlet entitled "A Friendly Admonition to the Drinkers of Brandy and other Distilled Spirituous Liquors" Two years later he was associated with a number of physicians in a tract entitled "Distilled Spirituous Liquors, the Bane of the Nation," a tract to which Fielding referred, when, in 1751, as a Bow-street magistrate, he urged the legislature to enact some measure of prohibition A month later Hogarth published his print, "Gin Lane," designedly produced at so low a price as to be within the means of all Forced into action, Parliament passed a Bill "For Restricting the Sale of Spirituous Liquors," and some of its provisions are in force to this day This temperance campaign afforded him considerable satisfaction in the closing years of his life To the Rev William Henry he wrote as follows.—

> "Tho' I thank God, that I have been blessed with Success in promoting several Things which will be of a lasting Benefit to Mankind, yet nothing I have done, has given me near the Satisfaction, that the public Testimony, which I have for 26 Years past borne against these infernal Spirits, ten different Times, has given me And as I intend soon to begin to print my second Volume on Ventilators, I have in the strongest Terms expostulated on the Subject, hoping that as Ventilators are coming into more and general Use, so my Book on that Subject will probably be proportionately dispersed about the World, In which I have given my last dying Testimony against them, I being this Day, I bless God, *Eighty years* old"

Mrs Stephens's Medicines

In contrast to his exact science we now turn to an amazing episode in his career A certain Mrs Joanna Stephens, daughter of a gentleman of good estate and family in Berkshire, accidentally discovered a method of dissolving the stone Many persons afflicted with the distemper of the stone received considerable relief from Mrs Stephens's medicines, and among them a no lesser personage than the Postmaster-General In the year 1737 the cures performed by her medicines were so numerous and so well attested that the speedy publication of them was deemed to be of great importance to mankind. Accordingly, after an attempt to raise the money by public subscription had failed, Mrs Stephens was advised to apply to the House of Commons for a reward when she should declare the secret of her medicines The necessary Bill was brought in, passed both Houses and received the Royal Assent on June 14th, 1739 By this Bill it was enacted that the sum of £5000 should be applied and paid to the said Joanna Stephens when she had divulged the nature of her medicines and her methods of preparing the same, and when the trustees appointed under the Act had satisfied themselves of the utility, efficacy, and dissolving power thereof The 30 trustees included the Archbishop of Canterbury, the Lord Chancellor, the Lord President of the Council, the Lord Privy Seal, the Lord Chamberlain, the Bishops of Oxford and Gloucester, the Speaker of the House of Commons, a number of noblemen, gentry, physicians, and surgeons, and the Rev Stephen Hales Mrs Stephens at once divulged the secret of her medicines to the Archbishop These consisted of egg-shells, snails, and swines-cresses, burned to a blackness until the snails had done smoking, herbs, soaps, and honey! On March 5th the trustees met in the House of Lords Four persons appeared before them who had taken Mrs Stephens's medicines The physicians and surgeons testified with one accord to the completeness with which the distemper of the stone had been eradicated The trustees signed the necessary certificate required by Act of Parliament and Mrs Stephens duly received her reward of £5000 at the Exchequer And what part did Hales play in this remarkable affair? He had already made numerous

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Hales was an ardent parish priest, he served his parish with the same energy and zeal as he prosecuted his scientific experiments He made the women of his parish do public penance for irregular behaviour He prevailed upon the Lord of the Manor to enlarge the churchyard He arranged for a new parish water-supply He caused a lantern to be erected on the church tower

> "in which to hang a loud bell to be heard at a much greater distance, not only for the benefit of the serious and the well disposed, but also as a constant memento to the careless, the negligent, and the profane, who with the wicked in Job are but too apt to say *Who is the Almighty that we should serve him? And what profit should we have if we should pray unto him?*"

On this bell Hales ordered the words "Worship God" to be inscribed His church was soon too small to accommodate all those who would come to hear him preach He therefore built a new aisle, and replaced the old wooden tower by a brick one The money for these alterations was largely raised by the sale of pews, which were leased to their prospective owners, their heirs and assignees for ever, and all for the sum of 4*s* 3*d* the square foot! But, in addition, Hales contributed £200 himself This information is gleaned from the Teddington parish registers in which he also made the following quaint entries "John Rolt, who was murdered in fighting for the maypole, buried May 23rd, 1710 James Parsons, who had oft eat a shoulder of mutton and a peck of hasty pudding at a time which caused his death, buried March 27th, 1744, aged 35" Here too is recorded the one tragedy of his life In 1720 he had married Mary, daughter of Dr Richard Newce, of Much Hadham, Hertfordshire But his wife died without issue just a year later, and in the register he had to write, "Mary Hales, my dear wife, was buried Oct 10th, 1721"

His Character

Of his character let one of his contemporaries speak "He possessed a native innocence and simplicity of manners, which the characters of other men, and the customs of the world could never alter, and though he often met with many unworthy objects of this kind and uncharitable offices, yet they never once lessened his natural and unwearied disposition of doing good and relieving distress His temper, as well as the powers of his understanding, were happily fitted for the improvement of natural philosophy, possessing, as he did, in an uncommon degree, that *industry and patient thinking*, which Sir Isaac Newton used modestly to declare, was his own only secret by which he was enabled so fortunately to trace his wonderful analysis of nature Dr Hales began his inquiries into natural knowledge very early in life, and he continued them uniformly as his darling amusement, being engaged in experiments until a few weeks of his death His industry had likewise this farther excellence, that it was always pointed at the general good of his fellow creatures, agreeable to the unlimited benevolence of his heart, and being animated with the success of some of his more useful discoveries, his knowledge appeared to everybody near him to feed his mind with a nourishment that gave him, in decline of life, and even in its last stages, that vigour and serenity of understanding, and clearness of ideas, which so few possess, even in the flower of manhood and which he used often to say, he valued as the most perfect of all human pleasures There are two things in his character which particularly distinguish him from almost every other man the first was, that his mind was so habitually bent on acquiring knowledge, that, having what he thought an abundant income, he was solicitous to avoid any farther preferment in the church, lest his time and his attention might thereby be diverted from his other favourite and useful occupations The other feature of his character was no less singular he could look even upon wicked men, and those who did him unkind offices, without any emotion of particular indignation, not from want of discernment or sensibility, but he used to consider them only like those experiments, which, upon trial, he found could never be applied to any useful purpose, and which he therefore calmly and dispassionately laid aside"

His Work on the Chemistry of Respiration

But to return to his science An accidental observation, that bubbles of air ascended with the sap, was responsible for Hales leaving the comparatively simple problem of the circulation of the blood, to attack a much more difficult subject—the chemistry of respiration Any account of his work in this field would be meaningless without some statement of the position of knowledge of this subject in his day Galileo and Newton had already made physics an exact science But chemistry, a long way behind, remained an empirical and largely speculative study The conception of chemical elements had not yet been formed, a logical formulation of chemical compounds was not yet possible Chemical substances were still described and classified according to their properties In 1660 Robert Boyle had demonstrated that a candle became extinguished, and that an animal died when placed in an evacuated vessel Nine years later Lower discovered that blood takes up air At about the same time Mayow, of All Souls, but for whose untimely death the history of science might read very differently, came to the conclusion that it was not the whole air, but a part of it only, which was essential for respiration and combustion alike, this fraction he called the "spiritus nitro æreus" Thus Mayow virtually discovered oxygen, and laid the foundation of a true conception of animal heat, when he supposed that this arose from the combination of his nitro-aereal spirits with the sulphurous particles of the blood Mayow clearly realised that a part of the air went into combination with the blood, but he failed to realise that anything came out. His work, however, received but scant attention, and 30 years later knowledge was put back over a century, when Stahl, failing to make the necessary distinction between matter and energy, introduced his phlogiston theory According to this conception, which dominated biology and chemistry for over a hundred years, when a substance burned, phlogiston departed from it, the body suffered a loss, it became dephlogisticated Stahl, rejecting the idea that animal heat was due to chemical action, returned to the old view that it arose from friction of the blood in the vessels, while his pupil Haller, writing only a few years before Hales died, denied that air entered into combination with the blood, so completely had the work of Mayow and Lower been neglected Not till 1754 did Black deal his death-blow to the phlogiston theory when he prepared carbon dioxide, and not till 20 years after Hales's death, in his eighty-fourth year, did Lavoisier enunciate the true principles of respiration, combustion, and animal heat

Applying his "statical method," Hales demonstrated that plants absorb considerable quantities of "air" By distilling vegetable substances he showed that plants contained "air" He came to the conclusion that "air" enters into the constitution of plants, and that an important function of the leaves was absorption of this form of nourishment "It is by this amphibious property of air," he wrote, "that the main and principal operations of nature are carried on", and then this significant sentence. "May not light also, by freely entering the expanded surfaces of leaves and flowers, contribute much to the ennobling the principles of vegetables?" As Michael Foster pointed out, Hales was the first man to give a clear enunciation of the existence of gases in both a combined and a free state

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Hales was an ardent parish priest, he served his parish with the same energy and zeal as he prosecuted his scientific experiments He made the women of his parish do public penance for irregular behaviour He prevailed upon the Lord of the Manor to enlarge the churchyard He arranged for a new parish water-supply He caused a lantern to be erected on the church tower

> "in which to hang a loud bell to be heard at a much greater distance, not only for the benefit of the serious and the well disposed, but also as a constant memento to the careless, the negligent, and the profane, who with the wicked in Job are but too apt to say *Who is the Almighty that we should serve him? And what profit should we have if we should pray unto him?*"

On this bell Hales ordered the words "Worship God" to be inscribed His church was soon too small to accommodate all those who would come to hear him preach He therefore built a new aisle, and replaced the old wooden tower by a brick one The money for these alterations was largely raised by the sale of pews, which were leased to their prospective owners, their heirs and assignees for ever, and all for the sum of 4*s* 3*d* the square foot! But, in addition, Hales contributed £200 himself This information is gleaned from the Teddington parish registers in which he also made the following quaint entries "John Rolt, who was murdered in fighting for the maypole, buried May 23rd, 1710 James Parsons, who had oft eat a shoulder of mutton and a peck of hasty pudding at a time which caused his death, buried March 27th, 1744, aged 35" Here too is recorded the one tragedy of his life In 1720 he had married Mary, daughter of Dr Richard Newce, of Much Hadham, Hertfordshire But his wife died without issue just a year later, and in the register he had to write, "Mary Hales, my dear wife, was buried Oct 10th, 1721"

His Character

Of his character let one of his contemporaries speak "He possessed a native innocence and simplicity of manners, which the characters of other men, and the customs of the world could never alter, and though he often met with many unworthy objects of this kind and uncharitable offices, yet they never once lessened his natural and unwearied disposition of doing good and relieving distress His temper, as well as the powers of his understanding, were happily fitted for the improvement of natural philosophy, possessing, as he did, in an uncommon degree, that *industry and patient thinking*, which Sir Isaac Newton used modestly to declare, was his own only secret by which he was enabled so fortunately to trace his wonderful analysis of nature Dr Hales began his inquiries into natural knowledge very early in life, and he continued them uniformly as his darling amusement, being engaged in experiments until a few weeks of his death His industry had likewise this farther excellence, that it was always pointed at the general good of his fellow creatures, agreeable to the unlimited benevolence of his heart, and being animated with the success of some of his more useful discoveries, his knowledge appeared to everybody near him to feed his mind with a nourishment that gave him, in decline of life, and even in its last stages, that vigour and serenity of understanding, and clearness of ideas, which so few possess, even in the flower of manhood: and which he used often to say, he valued as the most perfect of all human pleasures There are two things in his character which particularly distinguish him from almost every other man the first was, that his mind was so habitually bent on acquiring knowledge, that, having what he thought an abundant income, he was solicitous to avoid any farther preferment in the church, lest his time and his attention might thereby be diverted from his other favourite and useful occupations The other feature of his character was no less singular he could look even upon wicked men, and those who did him unkind offices, without any emotion of particular indignation, not from want of discernment or sensibility, but he used to consider them only like those experiments, which, upon trial, he found could never be applied to any useful purpose, and which he therefore calmly and dispassionately laid aside"

His Work on the Chemistry of Respiration

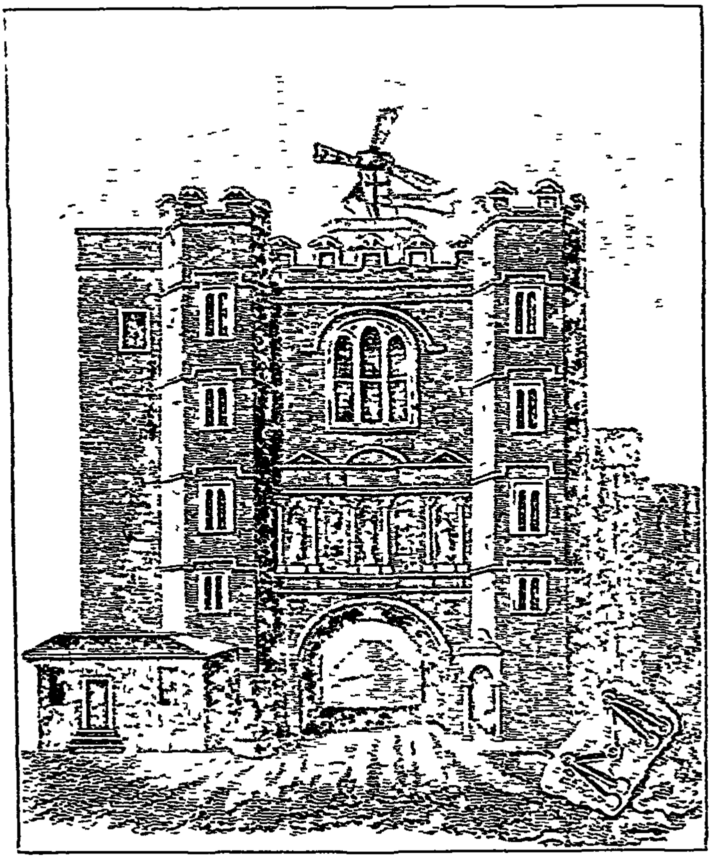
But to return to his science An accidental observation, that bubbles of air ascended with the sap, was responsible for Hales leaving the comparatively simple problem of the circulation of the blood, to attack a much more difficult subject—the chemistry of respiration Any account of his work in this field would be meaningless without some statement of the position of knowledge of this subject in his day Galileo and Newton had already made physics an exact science But chemistry, a long way behind, remained an empirical and largely speculative study The conception of chemical elements had not yet been formed, a logical formulation of chemical compounds was not yet possible Chemical substances were still described and classified according to their properties In 1660 Robert Boyle had demonstrated that a candle became extinguished, and that an animal died when placed in an evacuated vessel Nine years later Lower discovered that blood takes up air At about the same time Mayow, of All Souls, but for whose untimely death the history of science might read very differently, came to the conclusion that it was not the whole air, but a part of it only, which was essential for respiration and combustion alike, this fraction he called the "spiritus nitro æreus" Thus Mayow virtually discovered oxygen and laid the foundation of a true conception of animal heat, when he supposed that this arose from the combination of his nitro-æreal spirits with the sulphurous particles of the blood Mayow clearly realised that a part of the air went into combination with the blood, but he failed to realise that anything came out. His work, however, received but scant attention, and 30 years later knowledge was put back over a century, when Stahl, failing to make the necessary distinction between matter and energy, introduced his phlogiston theory According to this conception, which dominated biology and chemistry for over a hundred years, when a substance burned, phlogiston departed from it, the body suffered a loss, it became dephlogisticated Stahl, rejecting the idea that animal heat was due to chemical action, returned to the old view that it arose from friction of the blood in the vessels, while his pupil Haller, writing only a few years before Hales died, denied that air entered into combination with the blood, so completely had the work of Mayow and Lower been neglected Not till 1754 did Black deal his death-blow to the phlogiston theory when he prepared carbon dioxide and not till 20 years after Hales's death, in his eighty-fourth year, did Lavoisier enunciate the true principles of respiration, combustion, and animal heat

Applying his "statical method," Hales demonstrated that plants absorb considerable quantities of "air" By distilling vegetable substances he showed that plants contained "air" He came to the con-

The ancient Savoy Palace, which stood in the Strand, is described in the early part of the eighteenth century as follows:—

' This *Savoy* House is a very great and, at this present, a very ruinous Building Its large Hall is now divided into several Apartments A Cooper hath a Part of it for stowing of his Hoops Other Parts of it serve for two Marshalseas for keeping Prisoners, as Deserters, men prest for military Service, *Dutch* recruits, &c. In this *Savoy*, how ruinous soever it is are divers good Houses "

These "good houses" comprised the Royal printing press a parish church, meeting places for a number of religious sects a prison, and "harbours for many refugees and poor people ' The Savoy prison had an evil reputation for the gaol distemper Regiments on service were terrified of receiving drafts of pressed men thence lest they brought the typhus with them. So in 1749 the following item of news appeared in an issue of the *Gentleman's Magazine*. The good Doctor, by desire of the secretary at war was this day at the Savoy prison, to direct a proper place for the erection of a large ventilator "



The windmill ventilator erected by Hales on Newgate by order of the Aldermen of the City of London in 1752

(*From a print in the British Museum*)

Hales's ventilators were also installed in the gaols at Northampton, Shrewsbury, Winchester. Maidstone Bedford and Aylesbury. in the London small-pox hospitals and at St. George's, also in hospitals at Durham Winchester and Bristol and even at Naples! Later they were introduced into the naval and military hospitals and prisons at Gosport. Portsmouth and Plymouth. So eventually even the Navy was convinced

"God be thanked" writes Hales "they are now come into general esteem for the apparent salutary good effect of them in our fleets, hospitals &c. In the beginning of the year 1756, the Lords Commissioners of the Admiralty ordered them to be put on board the *Royal George* our largest ship in which the honourable Admiral Boscawen, taking care to have them properly worked, they were found to have the desired good effect, so to refresh the whole air in the ship as to preserve in good health 850 men which happy event occasioned their being ordered to be put into the whole fleet "

Wherever Hales's ventilators were installed the air in the wards is said to have been rendered much purer, and the mortality among the inmates from the gaol distemper considerably reduced But typhus is due to the bites of infected lice, and not to foul air as Hales supposed No amount of ventilation however perfect, could have abolished the gaol distemper Hales's bellows ventilator has gone Hospitals and prisons are so built in these days that mechanical ventilation is seldom necessary. But his principle of the forcible propulsion of air still persists. and adequate ventilation remains one of the first principles of preventive medicine Hales must therefore stand for all time, not only a great biologist, but one of the pioneers in public health.

Hales also suggested that his ventilators should be applied to a number of other practical purposes, and particularly to the preservation of corn dry in granaries and therefore free from being eaten by insects At his instigation, Duhamel erected a large windmill ventilator over a public granary in Paris, which is said to have served its purpose very successfully. Hales also recommended their use for drying gunpowder. purifying "stinking water,' and ventilating mine shafts. He even adapted them for domestic use Thus to the Rev. Dr. Kerrich, Dr Pyle, Chaplain to George II . wrote as follows:—

"Dear Sir —The only articles of that sort, that I know of, are: That Dr. Hales hath actually published: what has been sometime talked of a tube of tin, with a box, of the same, at the lower end of it (like a box for a great seal), that is full of very small holes This engine, with the help of a pair of bellows, blows up cream into syllabub, with great expedition. This complex machine hath already procured the Dr the blessing of the housekeeper of this Palace, and of all such as she is, in the present generation (who know the time and labour required to whip this sort of geer). and will cause his name to be had in reverence, by all housekeepers, in the generations that are yet for to come.'

His reputation as a scientist was now international. His books had been translated into all the chief European languages In 1753 he was elected one of the eight foreign members of the Royal Academy of Sciences in Paris. Three years later war was declared with France England was unprepared but the French were quick in their attack. "A despondency without parallel in our history" wrote Green the historian. took possession of our coolest statesmen and even the impassive Chesterfield cried in despair '*We are no longer a nation.*'" Throughout these depressing years Hales laboured unceasingly to get Louis XV. to order the installation of ventilators into the French hospitals and prisons where British soldiers were confined Exerting all his influence through Duhamel and the Duc de Noailles he was at last successful, and his ventilators were installed into some at least, of the French gaols with it is said, considerable reduction in the death-rate among the British prisoners On this occasion the Minister of Teddington was heard to say that he hoped no one would inform against him for corresponding with the enemy' unsuccessful attempts himself to discover a safe solvent for the stone. So when Mrs. Stephens's medicines came along he was quick to put them to some sort of experimental test. Against his better judgment he persuaded himself of their dissolving power in vitro, and then, too readily, accepted the convincing testimony of the men of physic, in whose province, as he so often said, it was not for him to meddle. In 1739 he was awarded the Copley Medal of the Royal Society, not for his classical experiments on the physiology of animals and plants, but for the least successful and least creditable of all his scientific endeavours—his work on the calculus!

His Applied Science.

This episode, which had brought him both into public affairs and into the field of clinical medicine, seems to have been a turning-point in his work. Being intimately associated with a number of sea-faring persons, and learning the various hardships they were compelled to endure on long voyages, he determined, out of the benevolence of his disposition, to make a definite attempt to do something towards ameliorating the conditions of life of sailors at sea. So Hales now leaves his academic biology to become, as we shall see, a master of applied science. He invented methods of purifying distilled water and salting animals whole. He advocated the addition of acid to keep fresh water sweet, and the use of burning brimstone, not only for the prevention of "weevil and meggots" in ship's biscuit, but for preventing the rise and spread of "infectious distempers." Some of his methods, or the principles on which they were based, were not altogether original. Some of the practices he advocated were of doubtful utility. But the value of this work of his lay, not so much in what he did, but in the fact that he never ceased forcing scientific methods on the attention of the Admiralty. He must have been regarded as an intolerable nuisance at first, to be laughed at by some, scorned by others. To such treatment, however, he was happily immune. Whether the Admiralty actually adopted some or any of these methods he advocated is uncertain, but his insistence prepared the way for the acceptance of his great invention that was to follow.

His Ventilators

In 1740 troops lay embarked off Spithead for an expedition to America. Hales suddenly conceived the notion that large ventilators would be very serviceable in making the air in ships more wholesome. These ventilators were to take the form of large bellows to be worked by hand, which would suck out the foul air from between decks. But he was not alone in this idea. A few months later, Martin Triewald, Captain of Mechanics and Military Architect to the King of Sweden, devised a similar machine which was fitted on board the men-of-war that were sent to blockade St. Petersburg. As Hales remarked:—

> "It were indeed a very extraordinary Circumstance, that two Persons at so great a Distance from each other, without getting a Hint of it, one from the other, should happen to hit on inventing a like very useful engine."

But it was even more remarkable than this, because at the same time, Sutton, a coffee-house keeper in Aldersgate-street, contrived a method of drawing off the bad air on board ship by means of the cook-house fire. Sutton's invention remained in obscurity, but Hales's ventilator at once attracted the attention of the Admiralty.

> "Dr. *Lee* having heard of them, he first," writes Hales, "and then the rest of the *Right Honourable the Lords Commissioners of the Admiralty*, were pleased to send for me, to be further informed about them; and thereupon were pleased to order the Master Ship-Wrights, and other officers of *Woolwich* and *Deptford* Yards to consider the most commodious Place where to fix them on a Ship."

Accordingly, they were fitted on board H.M.S. *Captain*, a 70-gun man-of-war. His ventilators, however, were received with 'coolness by some, and contempt by others", it was probably too much trouble to work them. But if they did not find favour at first in the Royal Navy, they met with great success in convict ships and the vessels of the slave trade. The mortality on slave ships was appalling; many are said to have lost up to 50 per cent. of their slaves during voyages across the Atlantic, a death-rate which the installation of ventilators did much to reduce. Five Nova Scotia ships were equipped with them by the Earl of Halifax. Only one slave died in the ventilated ships for every 12 in those unventilated. In a letter to Hales, Captain Thomson wrote as follows:—

> "We found this good Effect, from Ventilation, that though there were near 200 Men on board, for almost a Year, yet I landed them all well in Georgia notwithstanding they were pressed Men, and delivered me out of Gaols with Distempers upon them. This is what I believe but few Transports, or any other Ships, can brag of; nor did I ever meet the Good-luck before; which, next to Providence, I impute to the Benefit received by Ventilators."

Dr. Demambray wrote:—

> "Ventilators were put into the Vessels in the Slave trade, at *Bordeaux*, and in other Ports of *France*, the happy Effect of which was, that instead of the loss of one-fourth of those valuable Cargoes, in long Passages from *Africa* to the *French* plantations, the Loss seldom exceeded a twentieth. And since my Return to *England*, I have been informed of a *French* Vessel, which by this self-evidently reasonable Precaution, saved 308 out of 312 Slaves, spite of most tedious Calms, and a long Passage."

Thus Hales did much to mitigate some of the horrors of the slave trade, but it is an interesting illustration of the mentality of his generation in respect of social reform, that, when preaching before the trustees of the Colony of Georgia, he confidently justified slavery as being in accordance with the teaching of Christianity!

The Ventilation of Prisons

Entering the city from the west, the traveller of those days must have been confronted by a curious spectacle. Newgate, the ancient gate of London, built by the executors of the celebrated Richard Whittington, thrice Lord Mayor of London, and only partially destroyed in the Great Fire, had been rebuilt with considerable magnificence.

> "It consisted of a carriage archway in the centre; on the side, the footpath was continued through it, which supplied a shelter for two or three old women, who fried small sausages for sale; and in the centre of it was an entry to the chief prison of the city; the mendicant prisoners for debt stood within the iron grated door, vociferating their constant supplication for benefactions to a leathern bag which they drew in as often as it was touched; the upper chambers of the buildings constituted the prisons for felons, for whom a door was opened on the South side adjoining the old wall, and it was from this door that the malefactors were received into the cart for their last journey to Tyburn. Upon the summit was a machine for air, invented by Dr. Hales."

In 1750 a tragedy had occurred during the trial of malefactors at the Sessions House in the Old Bailey. The Lord Mayor, two judges, and a total of 60 persons had died of the gaol distemper, communicated to them by the felons from Newgate! The aldermen of the City of London, naturally seriously alarmed, consulted Hales, and decided to instal ventilators in Newgate to be worked by a windmill erected on the "leads." During the construction of the ventilator the youngest of the journeymen on the work was forced to go down into the main shaft of the ventilator by his fellows to bring up a wig one of them had thrown down. As the windmill was working at the time, he nearly "died of the Stink" it is said, before they could get him up. That night this young man contracted typhus, and seven out of Mr. Stibbs's eleven workmen were striken with the same disease. When at last the system was complete Hales made a tour of inspection of Newgate, and rejoiced to see the ventilators, "drawing like large heavy lungs at the rate of seven thousand tuns of foul air per hour out of the different wards of the prison."

Registrar to enter No of Death Entry.

BIRTHS AND DEATHS REGISTRATION ACTS, 1836 TO 1926.

MEDICAL CERTIFICATE OF CAUSE OF DEATH

For use only by a Registered Medical Practitioner who has been in attendance during the deceased's last illness, and to be delivered by him to the Registrar of Births and Deaths direct

Name of Deceased . . . .

Date of Death as stated to me . . day of . 19 . . Age as stated to me . .

Place of Death . . . .

Last seen alive by me } day of 19 . Seen* / Not seen* } after death by me.

Post mortem held* / not held*

CAUSE OF DEATH

I Immediate cause†	*a*	. . .
Morbid conditions, if any, giving rise to immediate cause (stated in order proceeding backwards from immediate cause) .	*b* *c* .	. .
II Other morbid conditions (if important) contributing to death but not related to immediate cause		

I hereby certify that I was in medical attendance during the above named Deceased's last illness, and that the particulars and cause of death above written are true to the best of my knowledge and belief

Signature . . . . *Qualifications as registered by Medical Council* } .

Residence . . . . *Date* . . . .

* Strike out whichever is inapplicable
† This means the disease, injury, or complication which caused death—not the mode of dying, as, e g, heart failure, asphyxia, asthenia, &c

Immediate and Remote Causes

In a majority of cases only one cause of death need be stated and in these the form of the certificate is of little importance But where two or more causes are entered the distinction between "primary" and "secondary" is no longer called for, as it was found to give rise to confusion The present form of certificate is divided into two sections (I and II) In "I" should be entered the immediate cause of death and any morbid conditions which led up to it, the latter being stated in order backwards from the immediate to the remoter causes In "II" should be entered conditions which are not in the chain of pathological events which have led to the immediate cause of death but which have none the less contributed seriously to the fatal issue The seven examples here given are intended to make these points clear

When possible it should be stated in the certificate whether the condition was acute or chronic It is suggested that the practitioner should in each case first consider whether the essential features of the case cannot be epitomised by statement of a single cause—e g, pulmonary tuberculosis—and that where entry of more than one cause is required he should next consider whether the conditions specified were or were not of independent origin, and indicate this by entry in the appropriate space If either this distinction or that implied by order of entry under "I" cannot be made the fact should be stated

Seven Examples of Method of Using the New Form of Certificate

	Ex 1	*Ex 2*	*Ex 3*	*Ex 4*	*Ex 5*	*Ex 6*	*Ex 7*
I Immediate Cause	I (*a*) Lobar pneumonia	I (*a*) Puerperal eclampsia	I (*a*) Carcinoma of liver	I (*a*) Hæmatemesis	I (*a*) Acute peritonitis	I (*a*) Pyelonephritis	I (*a*) Bronchopneumonia
Morbid conditions if any, giving rise to immediate cause (stated in order proceeding backwards from immediate cause)	(*b*) — (*c*) —	(*b*) — (*c*) —	(*b*) Carcinoma of rectum (excised) (*c*) —	(*b*) Chronic gastric ulcer (*c*) —	(*b*) Intestinal perforation (*c*) Enteric fever	(*b*) Myelitis (*c*) Syphilis	(*b*) Operation (*c*) Strangulated inguinal hernia
II Other morbid conditions (if important) contributing to death but not related to immediate cause	II —	II —	II —	II —	II —	II —	II Chronic interstitial nephritis

Special Causes of Death

Some points arise in regard to special causes of death —

(*a*) *Cancer* —Attention is particularly directed

His Last Experiment.

In the year that the war began Hales performed his last experiment. He placed an equal number of gudgeon in two pails of pond-water; the water in one was ventilated with air, the water in the other allowed to remain stagnant. The fish in the former remained well, but those in the latter, the unventilated water soon "turned sick, came up for air and showed uneasiness, turned belly upwards, and then died." He commented on this experiment as follows:—

> "Hence we see the Benefit of frequently replenishing the Water with fresh Air, which we find is necessary not only to preserve the Life of Land Animals, but also of Fish, as also the Use of their Gills, to spread in thin Sheets fresh Supplies of Water, that they may the better come at the air in the water, for which Purpose both Sides of their Gills are furrowed with many fine Furrows, thereby to enlarge their Surfaces."

So at the age of 79 he returns from his applied science to his comparative physiology again, and after the lapse of 40 years completes his long series of experiments on respiration.

> "We have good reason," he writes "to be diligent in making farther and farther researches, for tho' we can never hope to come to the bottom and first principles of things, yet in so inexhaustible a subject, where every smallest part of this wonderful fabrick is wrought in the most curious and beautiful manner, we need not doubt of having our inquiries rewarded with some further pleasing discovery, but if this should not be the reward of our diligence, we are however sure of entertaining our minds after the most agreeable manner, by seeing in everything, with surprising delight, such plain signatures of the wonderful hand of the divine Architect, as must necessarily dispose and carry our thoughts to an act of adoration, the best and noblest employment and entertainment of the mind."

His Life's Work.

Hales was now over 80. He had advanced science by fundamental experiments on the circulation of the blood, the flow of sap, the chemistry of respiration, and the growth of bone. By his work on ventilation he had established one of the first principles of preventive medicine. He had ministered faithfully to his parish for over 50 years. In the last scene of his active life, we see him triumphant, reducing the mortality among British prisoners exiled in the gaols of France! Thus did Hales serve science and humanity, his King and his Country—service immortalised by Alexander Pope:—

From Peer or Bishop 'tis no easy thing
To draw the Man who loves his God, or King:
Alas! I copy (or my draught would fail)
From honest Mah'met,* or plain Parson Hale.

"Hales delighted to promote the honour of his God by advancing the best welfare of mankind," writes Butler. "In this employment, blessed with serenity of temper, he calmly met his death as an acquaintance long familiarised to this mind." Stephen Hales died at Teddington on Jan. 4th, 1761, in the eighty-fourth year of his age. His monument stands in Westminster Abbey, but his body lies buried, according to his own wish, under the tower which he had built himself, for the church he had loved so well. The inscription on the stones of the floor of the tower records the simple facts of his life and death but there is no epitaph written on his grave. To-day, however, 250 years after the birth of this great son of this College, let us adapt the words John Wesley wrote of him: "How well did Science and Religion agree in this man of sound understanding!"

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* Mah'met, a Turkish servant to the King, whom he took at the siege of Buda, and constantly kept about his person.

QUEEN MARY'S HOSPITAL FOR THE EAST END.—The Lord Mayor of London last week laid the foundation-stone of a new wing which will be a memorial to the late Dr. P. J. S. Nicoll, who for many years was chairman of the honorary staff and vice-chairman of the hospital. The extensions will provide 32 additional beds, 24 of which are intended for adult casualties, a new ward for children, and a solarium for which Dr. Nicoll had raised a large sum before his death.

DEATH CERTIFICATION

THE NEW FORM OF MEDICAL CERTIFICATE

WITH the coming into force of the Births and Deaths Registration Act (1926) on July 1st next a new form of medical certificate is being issued for the use of registered practitioners. The new form of certificate has been drawn up after consultation between the Registrar-General and representatives of leading bodies in the medical profession with the object of making the official records of the causes of death a more exact summary of the opinions expressed in the certificate than hitherto. The essential part of the certificate is reproduced on the opposite page. On the left of this certificate form is a counterfoil for use of the medical attendant, on the right is the notice to informant that a medical certificate of the cause of death has been signed. The book in which these certificates are bound contains notes and suggestions to certifying medical practitioners.

The Certifier.

No medical certificate of cause of death may be given on the prescribed form unless the certifying medical practitioner has been in attendance upon the deceased during his or her last illness. The certificate must be given and signed by the practitioner who has been attending the deceased during the last illness, and no other person or practitioner may sign the certificate on his behalf. A registered medical practitioner who was in attendance upon a deceased person during his or her last illness is required to give a medical certificate of cause of death on the prescribed form in every case.

The Cause of Death.

The cause of death as certified by the practitioner in attendance during the last illness is entered by the registrar in the death register and forms part of that record. The entry in the death register and the certificate of cause of death itself are also utilised as material for the mortality statistics published by the Registrar-General. The value of these statistics will be materially enhanced if certifying medical practitioners will (*a*) read and adopt, so far as possible, the suggestions printed below, and (*b*) write the names of diseases (*in full*) in the certificates as legibly as possible, to avoid the risk of their being incorrectly transcribed into the death register. In view of the importance for many public purposes of the mortality statistics based upon these certificates, the Registrar-General hopes that he may rely upon the cooperation of the medical profession in these matters.

Use of Precise Terms.

It is desirable that medical practitioners should employ as far as possible only those terms recognised in the Nomenclature of the Royal College of Physicians of London. The use of vague and ill-defined terms is particularly to be avoided. An alphabetical list of such terms is appended,[1] with comments indicating in what respect the term is unsatisfactory and what further information as to the cause of death is required in each case. A few unobjectionable terms are included in the list for special reasons. This list is intended for reference only, and it is hoped that it will be consulted by certifying practitioners in any case in which they are not assured that the term used by them is included in the nomenclature of the Royal College of Physicians.

In cases where an indefinite term has to be employed because more definite information is lacking it would be well to indicate this fact in the certificate. The word "idiopathic" will be understood as indicating that the probable cause of the condition stated is unknown—e.g., idiopathic atrophy, idiopathic convulsions, idiopathic peritonitis, &c.

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[1] An extract of this list was given in THE LANCET of Feb. 12th, p. 359.

the soaking of the clothes with sweat during work and the change from the warmer mine to the colder surface above, pithead baths should do much to remedy both this and the excessive work given the housewife by the men bringing dirt into their homes and requiring hot baths Colliery stacks gave off much black smoke, especially where there were draught furnaces, no improvement was likely to result from the Smoke Abatement Act, 1926

Dr G Q **Lennane** (M O H , Battersea), dealing with the hygiene of flueless gas stoves, pointed out that their ventilating effect was nil ; further legislation was required prohibiting their use in dwelling rooms

Diphtheria Carriers

Dr J E **McCartney** (Director of Research, Metropolitan Asylums Board) spoke on diphtheria carriers He and Dr W C Harvey took as their criterion the presence of virulent diphtheria bacilli 12 weeks after the onset of the disease Before a case was discharged six consecutive negative swabs should be taken over a period of three weeks Among 1000 patients they had found 8 7 per cent of carriers , in another series of 1080, 8 2 per cent Organisms disappeared more rapidly from the throat than from the nose The age of the patient was important, carriers were more common in the first seven years of life Intermittent carriers were found By far the most of the carriers had recovered from their illness, and only 18 per cent showed any general debility If anything, severe cases were less liable to become carriers than others The carrier condition was due to failure of the normal process of getting rid of the bacilli , there was no evidence of difference of the bacterial flora in carriers and others, nor of an alteration in the biological character of the diphtheria bacilli The nasal element was very important, most of the nasal carriers were under 5 years of age, and had suffered from purulent rhinitis , in only eight out of 185 cases was a pathological lesion absent When rhinorrhœa disappeared the bacilli disappeared too, returning when the rhinorrhœa came back The antibody content in the blood of carriers was high , evidently the bacilli lived outside the human body on inflammatory products As regards treatment, when the bacilli were limited to the throat tonsillectomy brought about cure in 100 per cent of cases , the intricacy of the nasal passages in young children made it difficult to reach them from without, and they must be treated by autogenous vaccines made from the organism causing the inflammation, usually the pneumococcus or hæmolytic streptococcus Nasal douching was useful both to prevent and to remedy the condition

School Medicine

An interesting discussion on school medicine resulted from the papers of Dr **Dunstan Brewer** (M O H , Swindon), Dr J F **Blackett** (M O H , Bath), and Dr **Charbonnier** (St Josse ten Noode)

Dr **Brewer** pointed out that the aim of school medicine was not to patch up things which had gone wrong , what was needed was the physiological measurement of the phenomena of child life Dr **Blackett** said that, unfortunately, the criterion in school medicine to-day was the child's ability to take advantage of the education offered it and not his health The work should be primarily preventive Might it not be better to build a house to replace a slum dwelling rather than maintain four beds at a sanatorium? Although school doctors perhaps could not do research with a big " R," he thought that they were quite capable of cooperative research with clinicians medical statisticians, and pathologists — Dr **Charbonnier**, with other speakers, held that the school doctor should be a man of considerable experience There were many difficulties in school medicine and it was absurd that such work should be undertaken by the comparatively recently qualified —Dr G F **Buchan** (M O H , Willesden) remarked that while it was easy to diagnose a case of lobar pneumonia, it was extremely difficult to diagnose the conditions which had led up to a state of malnutrition. —Dr P **Lomry** (Belgian Ministry of Health) thought that the forcing of the intellects of young children was responsible for much ill-health and even fatal disease

Health Propaganda

The merits of public health propaganda gave rise to a lively discussion Dr L **Delattre** (Belgian Ministry of Health) considered that even the most humble classes of the community could be reached by instruction The public authorities could thus enable the people to avoid or reduce many illnesses. and interest would be aroused in the public health institutions The most valuable means of instruction were the Red Cross, the elementary school and the trained nurse —Dr K E **Tapper** (M O H , Bromley) said that in certain forms of health publicity half-truths were being exploited which to-morrow might prove fallacies , this called for a control of all health publicity The propaganda of so many societies was only leading to chaos in the public mind. —Dr C S **Thomson** (M O H , Deptford) held that it was the duty of those in charge of the public health to teach the people —Dr J R **Kaye** (M O H West Riding) said that very successful health crossword puzzles had been used in his schools Other speakers were doubtful whether the general population gathered very much from health lectures and addresses

Milk, Water, and Meat Supplies

Mr **Wilfred Buckley** (Chairman Clean Milk Society) asked for half-yearly inspection of cattle by whole-time veterinary inspectors in order to eliminate tuberculous milk He held that persons adulterating milk and defaulting wholesalers should be legally debarred from selling milk All milk sold should be classified in a way understandable by the purchasers, the price varying according to the quality —Dr **Kaye** was very much opposed to pasteurisation. and this measure was objected to by others as militating against the adoption of cleanly methods

Dr J J **Paterson** (M O H East Berks U S D). referring to the many town workers who slept in the country, said that they required much more water than the ordinary rural population The legal powers of a rural sanitary authority were at present inadequate The area of supply of a water company was limited by purely artificial boundaries fixed long before housing schemes were dreamt of and the company was under no obligation to supply water to a house or group of houses unless it " paved " Local territorial water boards were wanted —Mr L **Gillet** and Mr C **Guillaume** spoke on the value of determining the chlorides in connexion with the potability of water , the presence of more than an easily ascertained quantity was a safe index of pollution

Prof J T. **Share-Jones** (Director of Veterinary Studies, Liverpool University), speaking on animal industry and public health said that eventually the U S A would compete with Great Britain for the meat products of the Argentine He asked for a State-aided system of live stock insurance, in order that investors might be disposed to put more money into the industry in this country Out of such an insurance would grow measures for the prevention of disease among cattle

Dr E **Sacquépee** (Medical Inspector French Army) pointed out the value of a continuous medical supervision of army cooks during epidemics especially of intestinal diseases —Dr **Dequidt** (Inspector-General of Hygiene, France) and Prof **Rochaix** (Lyons) went into the administrative arrangements in various countries for dealing with " carriers "

INDUSTRIAL HYGIENE

In a presidential address to the Section of Industrial Hygiene, Viscount **Leverhulme** said that at Port Sunlight accidents were less frequent during periods of greatest employment • probably when employment was good the individual worked with greater to the request that the seat of primary occurrence should be returned in all cases where known

(*b*) *Childbirth* —Whenever parturition or pregnancy has been in any way a contributory cause of death, the fact should be mentioned on the certificate All diseases arising therefrom should be described as puerperal—e g , puerperal eclampsia, puerperal septicæmia, distinguishing in the latter case between septicæmia originating in abortion and in childbirth

(*c*) *Violence* —The following suggestions as to the form of certification of deaths from violence, which for this purpose includes all deaths from unnatural causes (including anæsthetics and poisons of all forms), whether accidental, suicidal, or homicidal, are extracted from the Registrar-General's Circular to His Majesty's Coroners (1911) —

> " In every case of death by violence or by suspected violence, whether the death resulted from the violence itself or from a pathological state induced by it, the verdict should state the form and means of violence, its accidental, suicidal, or homicidal nature, and the nature of the injury—e g fracture of skull (*nature of injury*) due to being *accidentally run over* (*form of violence*) by a motor-car (*means of violence*) "

(*d*) *Anæsthetics* —When death occurs during anæsthesia, or is in any degree attributable thereto, the nature of the anæsthetic used should be recorded

Reporting to the Coroner.

On the back of the certificate form is provision for two additional statements, to be filled up by the doctor in any case where they apply The first relates to informing the coroner The law as stated in Jervis on Coroners provides that —

> " In all cases of sudden death or death under any circumstances of suspicion where the duty of informing the Coroner is not by Statute imposed upon any particular person, it is the duty of those who are about the deceased to give immediate notice to the Coroner or his officer or to the nearest officer of police, who then communicates with the Coroner "

Where a practitioner who was in attendance during the deceased's last illness gives notice in accordance with the obligation above described he should, on giving the certificate of cause of death, initial the Statement A on the back of the certificate

Obligation to Give a Certificate

Some doubts have existed as to the duty of practitioners to give certificates of cause of death in a case where an inquest may possibly take place It is desired to point out that, as the law now stands, the duty placed upon a registered medical practitioner who was in attendance upon a deceased person in his or her last illness to give a medical certificate of the cause of death to the best of his knowledge and belief, appears to be unqualified, and unaffected by the fact that he or some other person has reported the case to the coroner or that an inquest may take place

The practice of refraining from giving a medical certificate of cause of death when the case is being reported to the coroner was to some extent strengthened by the fear that, if a medical certificate is given, the death may forthwith be registered and the body buried before an inquest can take place Statement A on the back of the certificate has accordingly been included to obviate any such risk If the practitioner when giving a certificate is also reporting the case to the coroner and accordingly initials Statement A on the back of the certificate, it will be the duty of the registrar to suspend the registration of the death until he learns from the coroner whether an inquest is or is not to be held

Additional Information

Cases are understood to occur where the practitioner, when certifying the cause of death, is aware that some post-mortem or laboratory examination is about to take place or is in progress, from the results of which some further information may become available which will be of value for statistical purposes Provision is accordingly made in Statement B on the back of the certificate whereby the practitioner may give an indication that he may be in a position, if applied to later by the Registrar-General, to furnish additional information for statistical purposes On the receipt by the Registrar-General of a certificate on which the practitioner has initialled Statement B, the Registrar-General will in due course address an inquiry to the practitioner in order that the latter may communicate any further information with respect to the death which he may then be able and willing to give.

Medical Officers of Institutions

In certain cases deceased persons whose death took place in an institution are certified on the medical certificate of cause of death as " not seen after death " for the reason that, although such persons may in fact have been seen after death by *some* medical officer of the institution, they were not seen after death by the medical officer by whom the certificate was actually signed The latter is recommended to cross out the words " not seen " and " me " in the statement—

" Seen
Not seen } after death by me "

and write underneath those printed words the name of the medical officer by whom the deceased was seen after death The certificate will then read—" Seen after death by Dr So and So "

ROYAL INSTITUTE OF PUBLIC HEALTH.

THE CONGRESS AT GHENT

THE annual Congress of the Institute was held at Ghent, Belgium, from June 1st to 6th under the presidency of Viscount BURNHAM The King and Queen of the Belgians were present at the inaugural meeting

Honorary degrees were conferred by the University of Ghent upon Sir Berkeley Moynihan (President of the Royal College of Surgeons of England), Lord Burnham, and Sir William Smith (senior Vice-President and Principal of the Institute)

PROBLEMS OF PUBLIC HEALTH

The subjects considered by the Section of State Medicine covered a large field

Dr MARY SHARE-JONES (A M O H , Denbighshire) discussed how far State interference in personal matters was justifiable She had found that the objection to vaccination was not intelligent but a mere stubborn display of freewill , legislation on vaccination was more forceful in other countries Notification of tuberculosis was very lax in some areas As regards housing to-day, there was a widespread demand for the withdrawal of State interference, but a compromise between this and private enterprise was wanted The absence of provision for compensation was a weakness in the Meat Regulations, and invited certain owners of animals to conceal disease

Dr W A MURPHY (M O H , Ogmore and Garw U D C) dealt with the sanitary problems of a colliery district The mining valleys in South Wales, he said, were so narrow that hillsides had to be excavated for housing sites, which added £50 to £100 to the cost of each house River pollution, due to the coal washings and the actual mine refuse falling into the rivers, was general Subsidence due to undermining broke the continuity of all pipes and caused the windows to jam The best type of owner felt discouraged because he was compelled to rebuild the house at the expiry of the lease Compensation should be payable The local sanitary authorities had no control over the sanitation of the mines , below ground the miners used the gobs or wastes for depositing dejecta, and probably the drinking of mine water accounted for sporadic cases of typhoid fever The death-rate from bronchitis in mining areas was much higher among males than females , this was probably due to chilling brought about by units on the march Six seats were provided for every 100 men; protection from rain was afforded by impermeable canvas He pointed out the waste of money entailed by erecting temporary latrines for a fortnight's camp, the use of shallow trenches was very objectionable Much illness in the army was due to constipation caused by reluctance to use unsatisfactory sanitary accommodation.

Selection of Airmen

Wing-Commander T S RIPPON dealt with methods of examination of airmen which did not require elaborate apparatus Personality was studied in conversation about the candidate's habits, amusements, likes and dislikes, the questions being founded on a knowledge of the temperament of the successful pilot Mental tests were then employed These included the time taken to play a single-handed game of dominoes (a very good time being 50–55 seconds) Visual apprehension was tested by exposing a group of ten familiar objects for six seconds, after which they were enumerated by the candidate, the average result was seven correct Reflex reaction time could be estimated by visual auditory or tactile signals, these were not found very useful if used alone, but when the candidate was given a choice of two or more signals and instructed to reply to one only, a higher correlation with flying ability was obtained If a sudden loud noise was added to the test, a satisfactory method of grading pupils under instruction was obtained

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CHINA

(FROM OUR OWN CORRESPONDENT)

Shanghai and the Defence Force

NOT often has the British Army been called upon to face a more difficult situation than now confronts the Defence Force at Shanghai In combination with Japanese, American, French, Italian, Spanish, and Portuguese units, as well as the International Volunteer Corps, our troops since landing have been guarding a city which is never ttacked and, now that the Chinese have noted its strength is not likely to be With this inaction it is no small task to keep the men constantly keyed up to fighting pitch, especially in such surroundings The boundary is marked by barbed wire fences within which, in an area of 8⅔ square miles with a foreign population of 23,100 and 802,700 Chinese—in other words, a density of 149 persons per acre—our 10,000 troops, in addition to those of other nations and a large number of commercial and missionary refugees, have had to find quarters From this it will be seen why the authorities have been hard put to it to meet the heavy civil and military requirements

Shanghai is fortunate in the possession of a very efficient municipal health department, at the head of which is Dr Noel Davis, under whose watchful eye the problems of sanitation and preventive medicine are being constantly studied and dealt with Since the arrival of the British troops there have been many cases of influenza and pneumonia, but the question of venereal disease has been the most clamant one, and in spite of every possible precaution the number of those affected has steadily increased The community has risen to the occasion and a great deal of very meritorious work has been done, notably by the British Women's Association, in opening recreation centres Football, hockey, and cricket fields have been provided and there are various clubs to which soldiers are made welcome No young soldier need lack for friends and entertainment, but in spite of all this care there are, unfortunately, ample opportunities of infection Numbers of prostitutes from north and south have flocked to Shanghai, most of them being Chinese (60 per cent), Russians (30 per cent), and Japanese (5 per cent) The majority of the brothels are in the French Concession and in Chinese districts bordering on municipal roads The high venereal rate has given the Command much concern and no stone is left unturned in the effort to lower it

The present cool spring is the healthiest time of the year Soon, however, the hot weather will set in and the authorities will have to face a momentous problem in maintaining the health of the Forces An important division of the work is that of inoculation and vaccination against the diseases endemic in Shanghai There is a field hygienic section and a sanitary section under Royal Army Medical Corps public health specialists with N C O's and men who are trained inspectors and are quick to see where faults need remedy Intensive health propaganda is going on throughout the Force, in addition to the work of inspecting, advising, and improvising A careful system of chlorination is carried out in each billet to safeguard the water-supply Mosquitoes swarm during the summer months and a net will be issued to each soldier, veils are to be worn by men on sentry duty. Flies will also come under ban as far as possible, food is to be kept in fly-proof safes and each unit is being provided with fly sprays for use in billets Chinese cooks are being carefully supervised and all food given to the Force is inspected by qualified members of the different units No cook can expect to retain his post unless he submits to examination to show whether he is a disease-carrier or not Electric fans are being provided and heat-stroke stations are being erected at which the troops can receive first-aid treatment, by application of ice caps, until they can be taken to hospital There is a health and sports section at Divisional Headquarters following the same lines as those worked out for the Army in India

It will thus be seen that the authorities are doing their very best for the soldier, who has a difficult psychological part to play in maintaining himself in a state of constant readiness to meet attack The whole political situation is too chaotic to admit of any intelligent anticipation, but there is every indication that no attempt on the Settlement is contemplated by the Chinese Generals of either side while our troops are here It may be said of the Shanghai Defence Force that it will not be needed till it has left Its advent undoubtedly saved the city.

The Military Hospital.

In a comparatively short time a modern office and apartment building has been transformed into a well-equipped and commodious 300-bed military hospital for British troops Wards for officers and deliberation On Mondays and Tuesdays the highest number of accidents occurred, then came Fridays, less occurred on Wednesdays and Thursdays The largest percentage of accidents were found amongst workers over 40 years of age, possibly because familiarity bred contempt Music had been introduced into departments where monotonous work, such as stamping, wrapping, and packeting of goods was carried on Factory girls, unfortunately, had no opportunity of learning housekeeping and the care of children before marriage, and employers would be doing a national service by supplying them with facilities

Cancer

A discussion on industrial cancer was opened by Dr A **Leitch** (Director of the Cancer Hospital Research Institute, London) and Dr R **Prosser White** (Wigan) Dr **Leitch** pointed out that persons exposed to influences conducive to cancer might develop the disease long after leaving their occupation He thought that Kashmir cancer was due to the influence of heat alone, all its victims showed multiple cicatrices, and there was no evidence of any influence of charcoal fumes Cancers due to single traumata occurred, but were rare He referred to a case of epithelioma of the skin inside the nostril, which had started 16 days after splashing with a spot of tar, many experiments had been made by dropping hot tar once on the back of mice, but it was very unusual for cancer to develop The tendency in Belgium to produce low temperature tars should help towards prevention of tar cancer, the lower the temperature at which tars and mineral oils were distilled the less was the tendency to produce cancer It was only when the tar from splint coal used in Scotland was distilled at high temperatures that it caused cancer He did not believe in an inherent disposition of an individual to contract the disease Nor was he convinced that oil need be locally applied to produce cancer of the scrotum, this part of the body was so sensitive that all that was necessary was for a minute portion of oil to reach the scrotum somehow In chimney-sweeps' cancer only an infinitesimal portion of soot reached the scrotum, again, only a small portion of this soot was soluble in sebaceous material, and it took years and years of this effect to produce the cancer Dr Leitch referred to the absence of mule-spinners' cancer when sperm oil was used, this oil was expensive, and efforts were being made to elaborate a suitable harmless vegetable oil which would be more widely used

Temperature and Humidity.

Mr S **Wyatt**, who is working for the Medical Research Council, gave instances of the deleterious effect of high temperature combined with humidity on the efficiency of workers Among tin-plate workers the output was 13 4 per cent less in the hottest month of the year than in the coldest month In the coal mining industry the most favourable temperatures and humidity for work occurred when the dry bulb registered 73 5° F and the wet bulb 66° F, only 59 per cent of this output was produced when the dry bulb registered 86 2° F and the wet bulb 79° F Industrial accidents were more frequent at high temperatures, the optimum being about 67° F, at 77° F the frequency was 23 per cent, and at 57° F 16 per cent greater Vernon and Bedford, examining the absences on account of sickness among women employed in six different departments of a factory, found that in one department, where the temperature was comparatively low, the loss of time during absence was greater in the winter months than in the other departments; a similar phenomenon occurred in the summer Increased air movement by means of fans would do much to produce cooling in factories It had been shown that if the cooling power of the naked skin were taken as 100, it was reduced to 73 by the wearing of a woollen vest the addition of a linen shirt brought it down to 60, whilst the wearing of a coat as well further reduced the cooling power to 46 Many industrial workers were overclad, they should have the arms, neck, and as much as possible of the chest and body bare, the garment should be loose and of loose texture

A paper by Prof C P. **Vaglou** (Harvard) dealt with experiments with two conditioning rooms in which the warmth, humidity, and air movements could be varied Many thousand trials had been made by factory employees wearing their working clothes, first they entered one room, and then the other, where the conditions had been adjusted to vary slightly, and then they were asked which they preferred From the results of these observations an "effective" temperature chart had been prepared The sensations of one temperature could be obtained at another temperature by adjusting the humidity and the air movement The comfort zone was at a much higher temperature when the workers were partly stripped —Prof E L **Collis** thought that although, for scientific purposes, the "effective" temperature chart would be valuable, in actual practice the kata-thermometer would still be widely used because of the difficulty of determining air movements at low velocities by anemometers, indeed, the kata-thermometer was the best anemometer under these conditions

Firedamp

In the course of a discussion on the hygiene of mines Dr **van Hassel de Paturage** said that firedamp was not poisonous in itself, it was only dangerous when it replaced the oxygen It might come out slowly from the coal or erupt suddenly, causing forcible projection of coal dust, rock, and pieces of wood Mixtures of 6 to 17 per cent of firedamp with air were explosive The miners might be injured by the projectiles, they might be burnt when the gas caught fire, and they might be asphyxiated by the carbon monoxide formed He emphasised the value of subcutaneous injections of oxygen, which should be given by a trained lay personnel, while the men were still down the mine, and described an apparatus he had invented for the purpose —Dr **Roels** thought that injections of lobeline should be tried —Prof **Collis** mentioned the apparatus recently brought out by Prof J S Haldane, much used in America and England, in which the oxygen administered was mixed with 4 to 5 per cent of carbon dioxide to stimulate the bulbar centres

Naval, Military, Air, and Tropical Diseases

At the section devoted to these subjects a paper on the maintenance of satisfactory air temperatures in living and working spaces in ships in the British Navy was read by Surgeon-Captain T B **Shaw**, and considerable time was given to health problems of the mercantile marine

Dr **Vigné** (Le Havre) pointed out the importance of preventing any tuberculous person entering the mercantile marine, the personnel should be inspected before every voyage by the ship's doctor (or in ships not carrying doctors by the port authorities) Tuberculosis was produced by the conditions of sea life, and there ought to be an insurance scheme so that any seaman discharged on account of tuberculosis should have monetary assistance to enable him to work at some other occupation

Dr R **Bernard** (Brussels) and Mr M **Haeck** (Ostend) outlined the arrangements necessary for wireless consultations at sea While avoiding any attempt at "treatment by correspondence," patients when at sea could be helped by radiotelegraphy Messages could be sent enormous distances by a system of relays, but first international agreement would have to be reached A code would not serve, and specially internationalised radiotelegraphic formulas would have to be devised; a special wavelength should be reserved for the purpose

Lieut -Colonel C F **Searle** showed a model of a portable field latrine which could be used even by units on the march Six seats were provided for every 100 men, protection from rain was afforded by impermeable canvas He pointed out the waste of money entailed by erecting temporary latrines for a fortnight's camp; the use of shallow trenches was very objectionable Much illness in the army was due to constipation caused by reluctance to use unsatisfactory sanitary accommodation.

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The Military Hospital.

In a comparatively short time a modern office and apartment building has been transformed into a well-equipped and commodious 300-bed military hospital for British troops Wards for officers and men, executive offices, operating theatres and adjoining surgical rooms, X ray equipment, laboratories, dispensary, dental clinic, living quarters for R.A.M.C. personnel—all of which are now comprised in the building's eight floors—make it difficult to think of the place as designed for any other purpose. An adjoining corner of land is rapidly being prepared as a recreation ground for patients. Partitions throughout the entire building were knocked down and three- and four-room apartments had their dividing walls removed to make the long wards. X ray work is done by a Solus portable apparatus which is mounted on a trolley, can be moved from one ward to another, and is noiseless when taking pictures. The fourth floor contains wards for acute medical cases, also a special ward for pulmonary isolation cases. The main surgical ward is on the fifth floor, together with the operating theatres. Officer patients are on the sixth floor in smaller wards and the hospital staff is housed on the seventh floor, while the kitchens are on the eighth floor where there are also dining and recreation rooms. The present staff represents only one-third of the actual unit, which is known as No. 7 British General Hospital; two-thirds of the staff and equipment are still at Hong-Kong. Brevet-Colonel E. Ryan, D.S.O., is in command. Another section of 200 beds will shortly be opened in the Polytechnic Public School, and accommodation is being sought for a further 100 beds. When the hot weather arrives and the disease-rate rises another general hospital will be available, as it has already left England. A large number of sick have already been admitted to the Country Hospital, a palatial new building embodying all the advantages of a modern hospital and recently put up by an Englishman who presented it anonymously to the Shanghai community for the use of all nationalities. Arrangements have been made for hospital accommodation in Vancouver for convalescents during the hot weather; but, if for nothing else than the sake of the British ratepayers' purse, it must be hoped that advantage will be taken of coastal health resorts in North China such as Wei-hai-wei, Shan-hai-kuan, and Peitai-ho, the use of which would obviate the long and costly journey to Canada and back.

ROYAL MEDICAL BENEVOLENT FUND

AT the last meeting of the Committee 36 cases were considered and £690 voted to 34 applicants. The following is a summary of some of the cases relieved.

L.R.C.P., aged 82, widower, one daughter, aged 33, teacher of piano and violin. Applicant had to give up practising on account of age and deafness. His savings with those of his daughter's were invested in purchasing the house they now live in. They have let three rooms receiving 25s. a week in rent. Apart from this applicant has the Old Age Pension and the daughter receives £20 as an organist. She has no pupils at present. Interest on mortgage £24 per annum. Ground rent £7, rates £20. Voted £10 in 12 monthly instalments.

Daughter, aged 79, of M.R.C.S. who died in 1885. She suffers from rheumatism and has cataract on both eyes. She has two pensions, one of which is the Old Age Pension, these amount to £66 per annum. £5 is received from investments and £65 from letting. Applicant's sister died last month and was an annuitant of this Fund. Voted £20 in 12 monthly instalments.

Daughter, aged 50, of M.R.C.S. who died in 1880. Only employment is rent collecting, from which she receives about £63 per annum. Other income £5 from investments. Rent 7s. 6d. per week. Unable to get additional work on account of ill health. The Fund helped this case in 1913 to enable the applicant to have typewriting lessons. Voted £26 in 12 monthly instalments.

Son, aged 16, of M.B. Glasg. who died in 1921. Mother is in a mental hospital. The boy is in charge of an uncle who is not able to keep him entirely. He earns 10s. a week as an engineer's apprentice. Fund repeated the grant of £26 towards his maintenance.

Son, aged 3, of L.R.C.P. who died in 1926. This boy, with his two elder brothers and one sister, are entirely dependent on an uncle who is quite unable to meet all the heavy expenses connected with maintenance and education. The boy for whom help is asked is living with his grandmother who only has the Old Age Pension and augments this by taking a lodger. Fund voted £25 towards maintenance.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters Symonds, at 11, Chandos-street, Cavendish-square, London, W. 1.

CARE OF MENTAL DEFICIENCY

THE BOARD OF CONTROL AND THE SOCIETY OF MEDICAL OFFICERS OF HEALTH

The Duties of Local Authorities

THE want of accommodation for all types of defectives was emphasised in the annual report of the Board of Control for the year 1924, and in the report for 1925 it is stated that the position has become more acute, since the number of new beds has not kept pace with the number of new cases, and nothing has been done to overtake the arrears. The Board of Control has invited local authorities to submit schemes, but the response has been poor, and the failure of local authorities to fulfil their duties is held to be hampering the beneficent objects of the Mental Deficiency Act, which was designed to give care, training, and protection to the most helpless class in the community. The total number of mental defectives ascertained up to the end of 1925 was 55,480, an increase of 6702 over the previous year. *There is strong evidence that a large* number of defectives have not yet been ascertained, some of the local authorities making insufficient use of the local branches of the Central Association for Mental Welfare in this connexion. Concerning 2338 of the cases reported by the local education authority in 1925 no action had been taken at the time of the issue of the last annual report of the Board of Control, and there were also 2141 cases otherwise ascertained for whom no form of care had yet been forthcoming. 1205 cases were "waiting removal" to an institution, being over 500 more cases than in the previous year. Only 17 local authorities have made institutional provision under Section 30 (*c*) of the Mental Deficiency Act, 7 others have acquired estates on which to establish colonies, and 18 are at least giving serious consideration to the problem.

This brief summary of the relevant section of the annual report of the Board of Control, on which we have already commented (THE LANCET, 1926, ii., 652), serves to show the magnitude of the problem and the need for examining every possible factor which may help local authorities to ascertain, classify, and place under supervision, guardianship, or institutional care the mental defectives in their districts. The various methods for dealing with mental defectives in this country are clearly summarised by Sir Robert Armstrong-Jones elsewhere in this issue of THE LANCET; it is evident that even were it possible to find suitable accommodation, guardians, or homes for every afflicted person the problem of classification would not be an easy one. But it is made more complex by the severe lack of institutional accommodation, which reacts on the selection by local authorities of cases suitable for statutory supervision or guardianship. The Board of Control have reason to believe that many local authorities have no guiding principle in the selection of suitable cases for supervision, and that large numbers are placed under supervision simply because there are no vacancies for them in institutions. As to guardianship, though the number of cases thus dealt with was 601 on Jan. 1st, 1926 (an increase of 111 on the numbers of the previous year), 54 local authorities out of a total of 121 have not a single case under guardianship, while 29 others have only one or at the most two cases.

Proposal to Appoint "Medical Officers of Mental Health"

Among the constructive suggestions made by the Board of Control is that of the appointment of whole or part-time medical officers with special training in the subject of mental deficiency to assist local committees in carrying out their work for the care, training and protection of defectives. At the present time three local authorities have appointed whole-time medical officers. In four cases general practitioners have been appointed as part-time officers, and two of these have had mental hospital or special school experience. In two other instances consultants have been appointed. The general practice, however, has been to place the medical work under the direction of the medical officer of health. Of the 333 medical officers to whom duties under the Mental Deficiency Act have been allocated by the local authorities only 108 have had special training or experience in mental deficiency work The Board of Control expresses the opinion that it is generally desirable that the medical officers actually doing the work should be in direct touch with the Statutory Committee for Mental Deficiency In their opinion efficiency is not likely to be secured if the subject is in the hands of a number of medical officers "without special training and chiefly interested in other public service" and they look forward to the time when each district will have a medical officer whose principal work is mental deficiency, and who should be the expert adviser of the committee The Board, in fact, go even further when they express conviction that "a measure which brought all mental patients under one authority both locally and centrally would be beneficial and would render a consistent and scientific treatment of the whole question possible It would then be essential that each county or county borough council should establish the post of medical officer of mental health"

Rejoinder of the Society of Medical Officers of Health.

It is hardly surprising that these suggestions have not been allowed to pass unchallenged A memorandum issued by the Society of Medical Officers of Health and appearing in the June issue of *Public Health* protests against statements in the annual report of the Board of Control which they consider to be calculated to induce local authorities to isolate mental deficiency work from the general work of public health They deprecate any suggestion that mental deficiency work should be carried out under the control of a medical officer who is not attached to the Public Health Department They point out that no proof is offered (or in their opinion exists) that those authorities which have employed whole-time medical officers exclusively for mental deficiency work have obtained better results than those who have entrusted the duties connected with this work to medical officers who combine it with other duties The Society give reasons for believing that "the chief medical adviser to the Mental Deficiency Act Committee should be the medical officer of health in whose department and under whose administrative supervision the whole of the work of mental deficiency undertaken by the county local authority should be carried out Any separation of the mental deficiency work from the Health Department must inevitably lead to increased cost and decreased efficiency. By combining various duties in one officer a substantial economy in working expenses is obtained and at the same time by allocating given proportions of time to the various duties there is no danger of any particular duty being neglected"

Such differences of opinion as to methods of dealing with the medical supervision of mental defectives at any rate point to a revival of interest in a rather depressing branch of sociology which has been unduly neglected

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The issue of *Nature* for June 18th will include a special supplement devoted to articles on various aspects of solar eclipses, of interest not only to observers but also to general readers The publishers are Macmillan and Co, St. Martin's-street, London, W C 2, and the price is 1s

We regret to announce the death on June 8th, at a nursing home in Greenford, of Mr George Bethell, Registrar of the Medical Society of London and secretary of the Royal Medical Benevolent Fund In both these capacities Mr Bethell's work brought him into close contact with a large circle of medical men who were able to rely confidently on his ability and devotion to duty He was in his fifty-eighth year

The Services.

ROYAL NAVAL MEDICAL SERVICE

Surg Comdr R H. Atkins is placed on Retd. List with rank of Surg. Capt

C T Hyatt, J L. Malone, and T F. Barlow to be Surg Lts

ROYAL ARMY MEDICAL CORPS

Lt-Col. and Bt Col. F S Irvine from R.A M C, to be Col, vice Col. H. Herrick to retd pay

Maj F J Garland to be Lt.-Col, vice Lt.-Col and Bt-Col. F S Irvine promoted

Capt E S Cuthbert to be Maj (Prov)

Maj A E G Fraser half-pay list, late R A.M C, on completion of a period of five years on the half-pay list, is placed on retd. pay on account of ill-health

Maj J Vallance Reg Army Res of Off to be Capt. whilst re-empld under Art. 507 (b) Royal Warrant for Pay and Promotion 1926, and relinquishes the rank of Maj

Capts to be Majs.: L. B Clarke and W. McE Snodgrass

Capt A Mearns to be Maj (Prov)

To be Temp Lts I MacW. Bourke, B H. H. Tripp G de N L Somers, and J B Carrigan.

TERRITORIAL ARMY

Lt. T Wallace late R.A.M.C, to be Lt

A T Ashcroft D S Middleton, and H. MacG Coope to be Lts

TERRITORIAL ARMY RESERVE OF OFFICERS.

Lt.-Cols E B Bird W Archibald A. A. W. Merrick A. Callam and N Maclaren from Active List (Supern.). to be Lt-Cols

Maj H K Griffith from Active List (Supern.) to be Maj.

Capt J V Holmes from the Active List to be Maj

Capt J K Davies, from the Active List, to be Capt.

INDIAN MEDICAL SERVICES

Col L. Humphreys to be Asst. Director of Medical Services, Baluchistan District vice Col A. H. Safford, Lt-Col H J Crossley to be officiating A.D M.S U P District vice Col A. B Fry on leave Capt D J Batterham to be Specialist in Radiology, Burma District vice Maj W. J Dunn Capt C A. Whitfield to be officiating Specialist in Surgery, Poona District, Secunderabad, vice Capt. O B C Anderson. Lt. W. A. Khan to be Specialist in Ophthalmology, Baluchistan District vice Maj S D Sondhi Capt. A. I. Cox officiates as Officer Commanding Indian Military Hospital, Loralai, and Maj R. Lee officiates as Senior Medical Officer, Zhob Independent Brigade Area. Lt.-Col. J. D Sandes, officiating Prof of Clinical Medicine, Medical College Calcutta, to act as Principal vice Lt-Col. F A. F. Barnardo, on leave. Col. G. Tate to be President of the Governing Body of the State Medical Faculty, vice Lt.-Col J. C Leicester Dr. Baijnath has been appointed on the Personal Staff of the Viceroy, vice Khan Bahadur Nazir Hussain, retired Lt.-Col W R Batty has resumed charge as Residency Surgeon Indore Lt.-Col. A. N Dickson has been posted as Residency Surg., Hyderabad. Dr Sukumar Sanyal Assistant Surg in Charge of the Main Hospital, Bilaspur, has been appointed to officiate as Civil Surg Seoni, vice Dr Narbada Prasad Shriastava, transferred to Nagpur Dr A. F C Gomes officiating Civil Surg Akola has been appointed temporarily to the Medical Charge of the District Jail Akola vice Lt-Col G Fowler on leave. Dr Sukumar Sanyal, officiating Civil Surg Seoni, has been appointed to the Executive and Medical Charge of the Subsidiary Jail, Seoni Lt.-Col E G A. Mathews Civil Surg from Hardoi to Aligarh. Lt-Col. H. Ross, Civil Surg from Aligarh to Cawnpore.

DEATHS IN THE SERVICES

Lt.-Col Edward Temple Harris D S O I.M.S, who died on May 24th at Maymyo, Burma was the son of Dr A. B Harris, who served during the Crimean War and who died at Falmouth last year at the age of 92 Born in 1878 Lt.-Col Harris graduated in medicine and surgery at Cambridge and was a medical student at Middlesex Hospital and received his first commission in the I M S in 1903 Subsequently he was gazetted to civil employment in Burma and in 1906 was medical officer to the 16th Rajputs (the Lucknow Regiment) During the late war he served with the East African Expeditionary Force and was present at the battle of Tanga (mentioned in dispatches and D S O) He married in 1905 Eva Russell daughter of the late Canon Brian Christopherson, rector of Falmouth, by whom he had two sons.

Correspondence.

"*Audi alteram partem*"

THE LOCAL ADMINISTRATION OF MENTAL DEFICIENCY

To the Editor of THE LANCET

SIR,—Will you allow me to comment upon the memorandum recently issued by the Society of Medical Officers of Health relating to mental deficiency administration and strongly attacking what is conceived to be the attitude and policy of the Board of Control I do not propose to refer in detail to this memorandum, I would merely say that its perusal seems to indicate the existence of so much misunderstanding regarding the report of the Board of Control, its attitude towards the Board is so markedly hostile, and its language so intemperate—indeed, one might not unfairly say so offensive—that one cannot but wonder how it came to be passed by the Society This tone is all the more unfortunate since the charge may well be made that those responsible for it do not occupy an entirely disinterested position concerning the chief matter at issue

With the view that disease of mind should be regarded as part of disease in general I entirely agree The progress of psychological medicine in the past has suffered greatly from the failure to appreciate this relationship, and one of the most satisfactory features of recent years has been the gradual breaking down of the artificial barrier which has long existed between disease of mind and disease of body Further, I entirely agree that the administration of the various Acts dealing with mental disease should, so far as is possible, form part of the Public Health Service, and that there should be the closest coordination of all the branches of this service But the memorandum goes on to suggest—indeed, to claim—that this coordination can only be secured by placing the administrative control of all these services in the hands of *one individual*—namely, the medical officer of health—and it is here that I venture to demur.

My objection to this policy of the creation of the post of Pooh-Bah is based upon the deliberate opinion that, owing to the developments in medicine which have taken place in recent years, it is no longer possible for any single individual to possess that knowledge of all its branches which is necessary for efficient administration. There are certain branches—such, for example, as those dealing with venereal disease, tuberculosis, infectious diseases, inspection and treatment of school-children—an adequate knowledge of which is possessed by every well-educated medical practitioner The administration of these services may well remain in the hands of the chief medical officer, the actual work being done by special assistants But there are other branches of work in which this is not so, and this is peculiarly the case with mental disease I have no hesitation in saying that the successful ascertainment, diagnosis, treatment, and administrative disposal of persons suffering from disorder, disease, or defect of mind can only be made by a practitioner who has spent years in the study of these conditions, and that there are very few, if any, medical officers of health who possess either the special knowledge, the experience, or even the time to do this work Here also the work could doubtless be delegated to an assistant possessing the necessary qualifications, but to secure efficiency of administration it would be essential that such subordinate officer should be given a considerable degree of freedom, that his initiative should be encouraged and, most important, that he should be in personal contact with, and responsible to, the Statutory Committee of the Council charged with this duty I hold no brief for the Board of Control, but so far as I understand their attitude this is all they ask for. They appear to be of the opinion that part, at all events, of the failure of local authorities to administer the Mental Deficiency Act is due to this work having been relegated to medical officers of health who have little interest in, less special knowledge of, and still less available time to do the work The failure is unquestionable The desire of the Board that the work should be in the hands of a specially qualified officer in direct touch with the Statutory Committee does not seem unreasonable

For my part I am disposed to think that the time has come when one should go even further Psychological medicine is not only a highly specialised subject, but it is one which in the near future must inevitably lead to more and more duties being placed upon the shoulders of local administrative authorities It is a recognised fact that if work is to be well done it must be in the hands of those interested in, and having special knowledge of it, and I very much doubt whether real efficiency will be attained with regard to defectives and to the early and appropriate treatment of mental patients unless the administration of this branch of medicine is made a separate department under its own chief There are plenty of young well-qualified members of the profession taking up this special work, but they naturally hesitate to enter the service of local authorities because, so long as they so specialise, they can never attain to more than a subordinate position This is good neither for progress nor for efficient administration, nor is it in the interests of the profession generally.

It may be suggested that the creation of such a separate department would be to undo the work of coordinating the various public health services, and contrary to the aim of the Ministry of Health Act of 1919 I do not think so The aim of that Act was to secure coordination by placing administrative control in the hands of *one and the same Council*, and not in the hands of one particular official (i e, the medical officer of health), of that Council, and I see no reason why coordination should in any way suffer by the heads of the respective departments being colleagues meeting one another on equal terms Such an arrangement would certainly be more likely to attract practitioners specialising in psychological medicine, and would thereby make for greater efficiency and the advantage of the community

I am, Sir, yours faithfully,

New Cavendish st, W, June 13th A F TREDGOLD

THE EMPLOYMENT OF MARRIED WOMEN

To the Editor of THE LANCET

SIR,—I enclose a copy of a letter addressed by the Medical Women's Federation to the members of the Durham County Council, regarding the recent resolution passed by them prohibiting the employment of married women in the county service The executive committee of the Federation beg me to request you to publish this protest.

I am, Sir, yours faithfully,
VIOLET KELYNACK,
Medical Secretary, Medical Women's Federation
9, Clifford street, W, June 13th, 1927

The enclosed letter to the members of the Durham County Council is as follows —

DEAR SIRS,—The Council of the Medical Women's Federation has learned with the deepest regret that the Durham County Council has decided to debar from employment on its staff all married women, medical and otherwise, whose husbands are in the receipt of an adequate income The Medical Women's Federation has always upheld the principle that considerations affecting efficiency of work should alone govern the appointment or dismissal of medical officers, and believe that this principle is in accordance with the true interests of the community

They would venture to point out that without the enactment of special restrictions, it is always open to an appointing authority to select unmarried rather than married candidates where they consider marriage is likely to act as a handicap to their work What the new regulation will do is to keep out of sight all possible married candidates, including it may be, women of exceptional ability and experience, or in regard to whom the handicap of marriage may be comparatively slight—i e, married women without children, or where children have reached an age to make little demand on the mother's time The consideration of special cases, where the compensatory advantages may largely overbalance the possible handicap of marriage, is debarred The rule also ignores completely the undoubted fact that in medicine, and other professions also, there are branches where the personal experience gained by marriage and motherhood adds to the value of the worker, as, for instance, in baby welfare work For these reasons we feel strongly that this regulation does not tend to the maintenance of the maximum efficiency of work or to the appointment in all cases of the best qualified candidates

We quite appreciate the point of view which wishes to distribute the employment available amongst as many households as possible, where compatible with efficiency, but if economic reasons of this kind are to be taken into consideration in making appointments, they ought to be made to apply to men also who possess, for instance, private means or a wealthy wife One point that we think is often overlooked is that married medical women, at any rate, who remain in employment after marriage, are obliged to employ at least one woman to look after their households, and if they have families often two or more people who would not be employed if the mother were at home Married women, and we think this especially true of married medical women, who remain in employment after marriage, usually do so, not because of the enhanced income, but because they like their work and are peculiarly efficient at it, and they distribute often the whole of their earnings in wages and salaries to others

We trust that the Council will favourably consider this protest It is sent because we feel strongly that prohibitive regulations of this kind are grossly unfair to women who have given years of work and devotion to their profession and also to the public, who are often deprived thereby of the services of tried and skilled workers

Yours faithfully,
Christine M Murrell, President
Frances Ivens, Past-President
Clara Stewart } Vice-Presidents
Ellen B Orr }
Jane H Walker, Hon Treasurer
June 1st F May Dickinson Berry, Hon. Secretary

THE SURGERY OF HERNIA

To the Editor of The Lancet

Sir,—In a letter which appeared in The Lancet on May 21st (p 1107) Dr J P. zum Busch has challenged my statement that Celsus himself operated But Leigh Watson, of Chicago, who has studied the subject of hernia most exhaustively, writes "Celsus operated extensively on umbilical hernias, &c" In the English translation of the works of Celsus, by James Grieve (1814), a detailed description of the operation of herniotomy is given (Lib vii, chap 20, page 354) It is impossible to imagine that such a fine description, including all the technical details, could be given by a mere lay writer. There is, in fact, ample internal evidence in the works of Celsus that he actually practised surgery Le Clerc, in his Histoire de la Médecine (Paris, 1760), describes the practice of Celsus in the treatment of various diseases For example, a splendid description is given of a "new method in the suture of abdominal wounds" Part II, lib iv, sect ii, chap 5, p 239) No one but an operating surgeon could have written such a fine technical account —I am, Sir, yours faithfully,

Wimpole street, W, June 13th, 1927 E M Cowell

PSYCHOGENIC ASTHMA

To the Editor of The Lancet

Sir,—In The Lancet of May 7th Dr. E B Strauss reports the cure by psychotherapy of two cases of asthma, which he regards as psychogenic Dr Strauss was unable to trace the psychogenesis to the sex instinct, whether a complete analysis would have discovered sexual factors it is impossible to say The fact is that the symptom disappeared without the patients being made conscious of sexual fixations or traumata. While the cases as reported give no evidence of the decisive importance of sexual factors, they are a striking witness to the traumatic results of actual experiences of dyspnœa—produced in the one case by a rag stuffed in the mouth by a nurse, in the other case by the water when the child fell into a stream While the theory of Freud seems insufficient to explain such reactions to dangerous stimuli, these psychogenic cases can be more clearly understood in the light of the recent development of Freudian theory by Rank, who discovered the importance of the trauma of birth in human development It is true that the average human being, in Rank's view, overcomes the painful experiences of birth and weaning, but in cases where later traumata occur, such as those in Dr Strauss's patients, the anxiety of the primal trauma can be associatively revived to cause symptoms The birth shock only becomes pathogenic in persons whose libido development has later been checked in the attempt to find substitutes for previous satisfactions lost by such experiences as painful weaning, the painful presence of rivals, or painful accidents and punishments The reaction to these traumata may be a neurotic anxiety affect or part of its physiological accompaniment such as dyspnœa —I am, Sir, yours faithfully,

San Francisco, May 19th, 1927 Cavendish Moxon

ACUTE HEPATIC ABSCESS

To the Editor of The Lancet

Sir,—The interesting account of two cases of acute hepatic abscess reported by Mr T J D Lane and Dr T A Austin in your last issue prompts me to put on record a somewhat similar case under my own care which is now doing well after operation

A lady, aged 44, had had definite symptoms of cholecystitis for at least two years Latterly her condition had become worse, her temperature rose regularly at night to 100°–101° F, her sclerotics were slightly tinged, and there was definite tenderness over the right upper abdomen She was very averse to operation and demanded X ray confirmation of gall-bladder trouble before submitting to laparotomy This was duly done by Graham's method The gall bladder showed as a very ill-defined shadow, but on one of the films a definite racemose shadow was discernable over the gall-bladder area The radiologist gave his diagnosis "cholecystitis with gall-stones present"

On opening the abdomen the first thing I noticed was a moderately enlarged and congested liver, on examining its inferior surface five small pale areas were seen bulging out, and these fluctuated to the touch. The general peritoneal cavity having been packed off the bulging areas were incised and from each of them pus oozed out. The gall-bladder was then examined, it was small in size and showed slight evidence of cholecystitis I decided to drain it through the main abdominal wound No gall stones were present. A stab wound was then made in the flank and through this a wide strip of corrugated rubber was passed to the area of the liver in which the abscesses were present

It is now four weeks since the operation and the patient has so far done well The tube came out of the gall-bladder on the tenth day and the stab wound drained a mixture of bile and pus for 15 days, when it was removed.—I am, Sir, yours faithfully,

Darlington, June 13th David R E Roberts

A POINT UNDER THE MIDWIVES ACTS

To the Editor of The Lancet

Sir,—In reference to my letter which appeared in your issue of May 28th under the above heading, the county medical officer to the Devon County Council informs me that when the Act of 1926 came into force every medical practitioner in the county was duly notified of the provision referred to in accordance with the circular of the Ministry of Health relative thereto Through the lapse of time, however, the position has arisen that some medical practitioners in the county of Devon (and doubtless in other counties) have not received any notification Bearing in mind that such documents are easily forgotten, the reasonable procedure to obviate the difficulty would be to print a notice on the forms supplied for making claims in respect of midwifery fees, indicating clearly that they must be rendered within two months of the time when the services are rendered

I am, Sir, yours faithfully,
Hugh Woods
London and Counties Medical Protection Society, Ltd,
Victory House, Leicester-square, W C, June 9th

Correspondence.

"Audi alteram partem."

THE LOCAL ADMINISTRATION OF MENTAL DEFICIENCY

To the Editor of THE LANCET

SIR,—Will you allow me to comment upon the memorandum recently issued by the Society of Medical Officers of Health relating to mental deficiency administration and strongly attacking what is conceived to be the attitude and policy of the Board of Control. I do not propose to refer in detail to this memorandum; I would merely say that its perusal seems to indicate the existence of so much misunderstanding regarding the report of the Board of Control; its attitude towards the Board is so markedly hostile, and its language so intemperate—indeed, one might not unfairly say so offensive—that one cannot but wonder how it came to be passed by the Society. This tone is all the more unfortunate since the charge may well be made that those responsible for it do not occupy an entirely disinterested position concerning the chief matter at issue.

With the view that disease of mind should be regarded as part of disease in general I entirely agree. The progress of psychological medicine in the past has suffered greatly from the failure to appreciate this relationship, and one of the most satisfactory features of recent years has been the gradual breaking down of the artificial barrier which has long existed between disease of mind and disease of body. Further, I entirely agree that the administration of the various Acts dealing with mental disease should, so far as is possible, form part of the Public Health Service, and that there should be the closest coordination of all the branches of this service. But the memorandum goes on to suggest—indeed, to claim—that this coordination can only be secured by placing the administrative control of all these services in the hands of *one individual*—namely, the medical officer of health—and it is here that I venture to demur.

My objection to this policy of the creation of the post of Pooh-Bah is based upon the deliberate opinion that, owing to the developments in medicine which have taken place in recent years, it is no longer possible for any single individual to possess that knowledge of all its branches which is necessary for efficient administration. There are certain branches—such, for example, as those dealing with venereal disease, tuberculosis, infectious diseases, inspection and treatment of school-children—an adequate knowledge of which is possessed by every well-educated medical practitioner. The administration of these services may well remain in the hands of the chief medical officer, the actual work being done by special assistants. But there are other branches of work in which this is not so, and this is peculiarly the case with mental disease. I have no hesitation in saying that the successful ascertainment, diagnosis, treatment, and administrative disposal of persons suffering from disorder, disease, or defect of mind can only be made by a practitioner who has spent years in the study of these conditions, and that there are very few, if any, medical officers of health who possess either the special knowledge, the experience, or even the time to do this work. Here also the work could doubtless be delegated to an assistant possessing the necessary qualifications; but to secure efficiency of administration it would be essential that such subordinate officer should be given a considerable degree of freedom, that his initiative should be encouraged and, most important, that he should be in personal contact with, and responsible to, the Statutory Committee of the Council charged with this duty. I hold no brief for the Board of Control, but so far as I understand their attitude this is all they ask for. They appear to be of the opinion that part, at all events, of the failure of local authorities to administer the Mental Deficiency Act is due to this work having been relegated to medical officers of health who have little interest in, less special knowledge of, and still less available time to do the work. The failure is unquestionable. The desire of the Board that the work should be in the hands of a specially qualified officer in direct touch with the Statutory Committee does not seem unreasonable.

For my part I am disposed to think that the time has come when one should go even further. Psychological medicine is not only a highly specialised subject, but it is one which in the near future must inevitably lead to more and more duties being placed upon the shoulders of local administrative authorities. It is a recognised fact that if work is to be well done it must be in the hands of those interested in and having special knowledge of it, and I very much doubt whether real efficiency will be attained with regard to defectives and to the early and appropriate treatment of mental patients unless the administration of this branch of medicine is made a separate department under its own chief. There are plenty of young well-qualified members of the profession taking up this special work, but they naturally hesitate to enter the service of local authorities because, so long as they so specialise, they can never attain to more than a subordinate position. This is good neither for progress nor for efficient administration, nor is it in the interests of the profession generally.

It may be suggested that the creation of such a separate department would be to undo the work of coordinating the various public health services, and contrary to the aim of the Ministry of Health Act of 1919. I do not think so. The aim of that Act was to secure coordination by placing administrative control in the hands of *one and the same Council*, and not in the hands of one particular official (i.e., the medical officer of health), of that Council, and I see no reason why coordination should in any way suffer by the heads of the respective departments being colleagues meeting one another on equal terms. Such an arrangement would certainly be more likely to attract practitioners specialising in psychological medicine, and would thereby make for greater efficiency and the advantage of the community.

I am, Sir, yours faithfully,

New Cavendish st., W., June 13th. A. F. TREDGOLD.

THE EMPLOYMENT OF MARRIED WOMEN.

To the Editor of THE LANCET

SIR,—I enclose a copy of a letter addressed by the Medical Women's Federation to the members of the Durham County Council, regarding the recent resolution passed by them prohibiting the employment of married women in the county service. The executive committee of the Federation beg me to request you to publish this protest.

I am, Sir, yours faithfully,

VIOLET KELYNACK,

Medical Secretary, Medical Women's Federation

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DEAR SIRS,—The Council of the Medical Women's Federation has learned with the deepest regret that the Durham County Council has decided to debar from employment on its staff all married women, medical and otherwise, whose husbands are in the receipt of an adequate income. The Medical Women's Federation has always upheld the principle that considerations affecting efficiency of work should alone govern the appointment or dismissal of medical officers, and believe that this principle is in accordance with the true interests of the community.

They would venture to point out that without the enactment of special restrictions, it is always open to an appointing authority to select unmarried rather than married candidates where they consider marriage is likely to act as a handicap to their work. What the new regulation will do is to keep out of sight all possible married candidates, including it may be, women of exceptional ability and experience, or in regard to whom the handicap of marriage may be comparatively slight—i.e., married women without children, or where children have reached an age to make little demand on the mother's time The consideration of special cases, where the compensatory advantages may largely overbalance the possible handicap of marriage, is debarred The rule also ignores completely the undoubted fact that in medicine, and other professions also, there are branches where the personal experience gained by marriage and motherhood adds to the value of the worker, as, for instance, in baby welfare work For these reasons we feel strongly that this regulation does not tend to the maintenance of the maximum efficiency of work or to the appointment in all cases of the best qualified candidates

We quite appreciate the point of view which wishes to distribute the employment available amongst as many households as possible, where compatible with efficiency, but if economic reasons of this kind are to be taken into consideration in making appointments, they ought to be made to apply to men also who possess, for instance, private means or a wealthy wife One point that we think is often overlooked is that married medical women, at any rate, who remain in employment after marriage, are obliged to employ at least one woman to look after their households, and if they have families often two or more people who would not be employed if the mother were at home Married women, and we think this especially true of married medical women, who remain in employment after marriage, usually do so, not because of the enhanced income, but because they like their work and are peculiarly efficient at it, and they distribute often the whole of their earnings in wages and salaries to others

We trust that the Council will favourably consider this protest. It is sent because we feel strongly that prohibitive regulations of this kind are grossly unfair to women who have given years of work and devotion to their profession and also to the public, who are often deprived thereby of the services of tried and skilled workers

Yours faithfully,
Christine M Murrell, President
Frances Ivens, Past-President
Clara Stewart } Vice-Presidents
Ellen B Orr }
Jane H Walker, Hon Treasurer
June 1st F May Dickinson Berry, Hon. Secretary

THE SURGERY OF HERNIA

To the Editor of The Lancet

Sir,—In a letter which appeared in The Lancet on May 21st (p 1107) Dr J P zum Busch has challenged my statement that Celsus himself operated But Leigh Watson, of Chicago, who has studied the subject of hernia most exhaustively, writes "Celsus operated extensively on umbilical hernias, &c" In the English translation of the works of Celsus, by James Grieve (1814), a detailed description of the operation of herniotomy is given (Lib vii , chap 20, page 354) It is impossible to imagine that such a fine description, including all the technical details, could be given by a mere lay writer There is, in fact, ample internal evidence in the works of Celsus that he actually practised surgery. Le Clerc, in his Histoire de la Médecine (Paris, 1760), describes the practice of Celsus in the treatment of various diseases For example, a splendid description is given of a "new method in the suture of abdominal wounds" Part II, lib iv, sect ii, chap 5, p 239) No one but an operating surgeon could have written such a fine technical account —I am, Sir, yours faithfully,

Wimpole street, W , June 13th, 1927 E M Cowell

PSYCHOGENIC ASTHMA

To the Editor of The Lancet

Sir,—In The Lancet of May 7th Dr E B Strauss reports the cure by psychotherapy of two cases of asthma, which he regards as psychogenic Dr Strauss was unable to trace the psychogenesis to the sex instinct, whether a complete analysis would have discovered sexual factors it is impossible to say The fact is that the symptom disappeared without the patients being made conscious of sexual fixations or traumata While the cases as reported give no evidence of the decisive importance of sexual factors, they are a striking witness to the traumatic results of actual experiences of dyspnœa—produced in the one case by a rag stuffed in the mouth by a nurse, in the other case by the water when the child fell into a stream While the theory of Freud seems insufficient to explain such reactions to dangerous stimuli, these psychogenic cases can be more clearly understood in the light of the recent development of Freudian theory by Rank, who discovered the importance of the trauma of birth in human development It is true that the average human being, in Rank's view, overcomes the painful experiences of birth and weaning , but in cases where later traumata occur, such as those in Dr Strauss's patients, the anxiety of the primal trauma can be associatively revived to cause symptoms The birth shock only becomes pathogenic in persons whose libido development has later been checked in the attempt to find substitutes for previous satisfactions lost by such experiences as painful weaning, the painful presence of rivals, or painful accidents and punishments The reaction to these traumata may be a neurotic anxiety affect or part of its physiological accompaniment such as dyspnœa —I am, Sir, yours faithfully,

San Francisco, May 19th, 1927 Cavendish Moxon

ACUTE HEPATIC ABSCESS

To the Editor of The Lancet

Sir,—The interesting account of two cases of acute hepatic abscess reported by Mr T J D Lane and Dr T A Austin in your last issue prompts me to put on record a somewhat similar case under my own care which is now doing well after operation

A lady, aged 44, had had definite symptoms of cholecystitis for at least two years Latterly her condition had become worse, her temperature rose regularly at night to 100°–101° F , her sclerotics were slightly tinged, and there was definite tenderness over the right upper abdomen She was very averse to operation and demanded X ray confirmation of gall-bladder trouble before submitting to laparotomy This was duly done by Graham's method The gall bladder showed as a very ill-defined shadow, but on one of the films a definite racemose shadow was discernable over the gall-bladder area The radiologist gave his diagnosis "cholecystitis with gall-stones present"

On opening the abdomen the first thing I noticed was a moderately enlarged and congested liver , on examining its inferior surface five small pale areas were seen bulging out, and these fluctuated to the touch The general peritoneal cavity having been packed off the bulging areas were incised and from each of them pus oozed out. The gall-bladder was then examined , it was small in size and showed slight evidence of cholecystitis I decided to drain it through the main abdominal wound No gall stones were present A stab wound was then made in the flank and through this a wide strip of corrugated rubber was passed to the area of the liver in which the abscesses were present

It is now four weeks since the operation and the patient has so far done well The tube came out of the gall-bladder on the tenth day and the stab wound drained a mixture of bile and pus for 15 days, when it was removed —I am, Sir, yours faithfully,

Darlington, June 13th David R E Roberts

A POINT UNDER THE MIDWIVES ACTS

To the Editor of The Lancet

Sir,—In reference to my letter which appeared in your issue of May 28th under the above heading, the county medical officer to the Devon County Council informs me that when the Act of 1926 came into force every medical practitioner in the county was duly notified of the provision referred to in accordance with the circular of the Ministry of Health relative thereto Through the lapse of time, however, the position has arisen that some medical practitioners in the county of Devon (and doubtless in other counties) have not received any notification Bearing in mind that such documents are easily forgotten, the reasonable procedure to obviate the difficulty would be to print a notice on the forms supplied for making claims in respect of midwifery fees, indicating clearly that they must be rendered within two months of the time when the services are rendered

I am, Sir, yours faithfully,
Hugh Woods
London and Counties Medical Protection Society, Ltd ,
Victory House, Leicester square, W C , June 9th

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND —At an ordinary meeting of the Council held on June 9th, with Sir Berkeley Moynihan, the President, in the chair, the following examiners were elected for the undermentioned examinations —

Primary Fellowship (Physiology) —Prof R J S McDowall and Prof C A Lovatt Evans
Second Conjoint (Physiology) —Dr D H de Souza
Final Conjoint (Midwifery) —Dr T B Davies
Diploma in Public Health (Part II) —Dr C W Hutt
Diploma in Ophthalmic Medicine and Surgery (Part II) —Mr Reginald A Greeves
Diploma in Laryngology and Otology (Part I) —Mr W Mayhew Mollison

Sir Berkeley Moynihan was re-elected as representative of the College on the Court of Governors of Sheffield University for three years —A vote of thanks was given to Miss Hunter, of Blackheath, for presenting to the College a combined bookcase and writing-table, formerly the property of John Hunter —The thanks of the Council were expressed to Sir John Bland-Sutton, on his retirement, for his services during his term of office on the Council extending over 17 years, including three years as President

As the result of the recent Final Fellowship Examination, held from May 19th to June 3rd, for which 108 candidates presented themselves, 25 candidates (24 men and 1 woman) were approved One candidate, Harry I Deitch (Middlesex Hospital) although successful, is not entitled to the diploma until he has attained the requisite age The Council accordingly conferred the diploma of Fellow upon the following 24 candidates who have complied with the necessary by-laws —

H G Armstrong, Toronto , Alfreda H Baker, Belfast , H B Bullen Cambridge and St Bart 's W K Connell, Glasgow and London , W H A Dodd Liverpool and Guy's , R L Dodds and I J Fraser, Belfast , W H Gervis, Cambridge and St Thomas's , C M Gwillim St Bart 's and St George's , W J Henry Toronto and London , R Y Hudson, Middlesex , D McKelvey, Edinburgh and Guy's , W A Mill, Guy's J D R Murray, Cambridge and Middlesex , M A Paul, Ceylon and King's Coll G H Pitt, Guy's , W A Richards, Charing Cross E W Riches and E L Robert, Middlesex , J Roberts Liverpool and London , F W Roques, Cambridge and Middlesex , S Y Unsworth, Liverpool A L Walker, Cambridge and Middlesex , and E Wolff, Univ Coll

The diploma of M R C S was also conferred upon the following candidates who have passed the requisite examinations and have now complied with the by-laws —

Y F Anderson, Westminster F A J Bouloux Univ Coll Ethel E M Ogilvie, Dulcie J Peake, Winifred M Turner, and John B Walker, Royal Free

UNIVERSITY OF BRISTOL —At recent examinations the following candidates completed the undermentioned examinations —

FINAL EXAMINATION FOR M B , CH B

Part I —G D J Ball O J P Bollon T L Cleave, R D Jenkins, Helen B Murgoci, Ethel M Redman, and Phœbe C Vine
Part II —Helen M Aldwinckle J C Batt H E C Bentley, E C Bernard, G L Feneley, Ernest May, E S Rogers, J R E Sansom, and Maiprom Srisvasti

FINAL EXAMINATION FOR DENTAL DIPLOMA

H G Clapp, E J Tanner, G W Vowles

ROCKEFELLER MEDICAL FELLOWSHIPS — The Medical Research Council announce that on behalf of the Rockefeller Foundation they have made the following awards of Medical Fellowships provided by the Foundation and tenable in the United States of America during the academic year 1927–28 These Fellowships are awarded to graduates who have had some training in research work either in the primary sciences of medicine or in clinical medicine or surgery, and who are likely to profit by a period of work at a university or other chosen centre in America before taking up positions for higher teaching or research in the British Isles —

Robert William FitzGerald Collis M B Camb , M R C P Lond (resident medical officer King's College Hospital London)

David Krestin M D , M R C P Lond (medical registrar, London Hospital)

Geoffrey Lewis Peskett, M A Oxf (demonstrator in biochemistry, University of Oxford)

Isabella McDougall Robertson M D Lond (research worker in the pathological laboratory Maudsley Hospital London)

*Thomas Tennent, M B Glasg (assistant medical officer Maudsley Hospital)

Edgar William Todd, M D Camb (research worker in the inoculation department St Mary's Hospital)

* Dr Tennent has been appointed on modified conditions while holding a scholarship from another source

UNIVERSITY OF DUBLIN —It is proposed to confer honorary degrees on June 28th upon Sir Humphry Rolleston, of Cambridge, and Prof Harvey Cushing, of Harvard

Trinity College School of Physic —The Fund subscribed by the medical graduates of the University to commemorate the bicentenary of the foundation of the School of Physic has now been handed to the Board of Trinity College, for the purpose of establishing a bicentenary memorial prize to be awarded each year to the winner of the medical or surgical travelling prize In accepting the Fund the Board has expressed thanks to the subscribers for " a very generous benefaction to the College " The amount of the Fund is about £730

CANCER RESEARCH IN DUBLIN —The Committee of the National Cancer Campaign (Ireland) has decided to hold its first public meeting to ask for public support on June 27th. The meeting will be held in the Royal College of Surgeons, and the chair will be taken by the Marquis of Dufferin and Ava, while among the speakers will be Sir Humphry Rolleston and Prof Harvey Cushing

GLASGOW UNIVERSITY CLUB, LONDON —The annual summer dinner of this club will be held at the Trocadero Restaurant, Piccadilly, W 1, on Friday, July 1st, Dr Charles O Hawthorne in the chair Any Glasgow University men who, though not members of the club, desire to attend, are requested to communicate with the honorary secretaries, at 62, Harley House, London, N W 1

ST JOHN'S HOSPITAL DERMATOLOGICAL SOCIETY — The annual oration of this society (which incorporates the London Dermatological Society) will be delivered at 5 P M. on Wednesday, June 22nd, at St John's Hospital, Leicester-square, by Dr H Haxthausen, of Copenhagen His subject will be Streptococcic Pityriasis The oration will be followed by the annual general meeting

THE LATE DR A E NORMINGTON —On May 27th, at the age of 55, Dr Arthur Edward Normington died at Rhos-on-Sea, where he had been living in retirement since the early part of this year He was born at Keighley, and educated first at the local grammar school and later at Owens College, graduating in medicine with honours at the Victoria University of Manchester in 1896 In the same year he won the medical and surgical clinical prize at the Royal Infirmary, Manchester, and after qualification he was appointed prosector and assistant demonstrator of anatomy at Owens College A short period was then spent as resident medical officer at Stoke Union Hospital, after which, about 27 years ago, he settled in practice at Nelson, Lancashire At first he acted as assistant to Dr W E Little, whose practice he later took over Dr Normington took a keen interest in ambulance work, and during the war was commandant of Reedyford Auxiliary Military Hospital, which later, largely as a result of his efforts, was turned into a memorial hospital for the use of the town. He was appointed a Member of the Order of the British Empire in recognition of his war services, and in 1920 was made a magistrate He leaves a widow, two sons, and one daughter

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION —On Monday, June 20th, at 2 30 P M., Dr A J Whiting will give a medical clinical demonstration at the Prince of Wales's Hospital , on Wednesday, June 22nd, at 4 P M., Mr C A Joll will give a surgical demonstration at the Royal Free Hospital on the Surgical Treatment of Goitre , on Friday, June 24th, at 3 P M., Mr Griffith will give a clinical ophthalmic demonstration at the Royal Eye Hospital These demonstrations will be free to members of the medical profession On June 27th a fortnight's course will begin at the City of London Hospital for Diseases of the Heart and Lungs (Fee £2 2*s*) In July five special courses will be given in various subjects The first will be an all-day course from July 4th to 16th at the National Hospital for Diseases of the Heart The daily sessions will begin at 10 A M and last until 4 P M , the numbers are strictly limited to 20 On July 11th the Prince of Wales's Hospital group will start a fortnight's course in general medicine, surgery, and the specialties, from 10 30 A M to 5 30 P M daily On the same date a week's course will begin at the St Mark's Hospital for Diseases of the Rectum, occupying six afternoons and three mornings The other two courses taking place in July are part-time courses —viz , a month's course in neurology at the West End Hospital for Nervous Diseases, starting on July 4th and consisting of lecture-demonstrations at 5 P M daily , and a course in infectious fevers at the Park Hospital, on Wednesdays at 2 30 P M , and Saturdays at 11 A.M , from July 13th to 30th A general course of work for which a separate programme is issued, is also provided by the Fellowship at the associated hospitals Copies of all syllabuses and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship at 1, Wimpole street, London, W 1

THE death is announced on June 11th of Dr Alexander Hugh Freeland Barbour who was at one time President of the Royal College of Physicians of Edinburgh and was physician to the gynæcological department of Edinburgh Royal Infirmary

MEDICO-LEGAL SOCIETY —The annual general meeting of this society will be held at 11 Chandos-st, London, W., on Thursday June 23rd, at 8 30 P M At the conclusion of business Lord Riddell will read a paper on the Law and Ethics of Medical Confidences. A discussion will follow

RESEARCH DEFENCE SOCIETY —The annual general meeting will be held at the house of the Medical Society of London, 11, Chandos-street Cavendish-square, W 1, on Tuesday June 21st, at 3 P.M., when Lord Lamington will take the chair Prof. Julian Huxley will give the first Stephen Paget Memorial Lecture, his subject being Research and the Community.

ST BARTHOLOMEW'S HOSPITAL —Sir Berkeley Moynihan, President of the Royal College of Surgeons of England has accepted an invitation to take charge of the work of the Surgical Professorial Unit at St Bartholomew's Hospital and Medical College from June 15th to 30th On previous occasions Prof Harvey Cushing, of Harvard University and Prof Hugh Cabot, of Ann Arbor University, have accepted similar invitations to the hospital.

KING'S COLLEGE MEDICAL SOCIETY.—A Lister Memorial Lecture will be delivered at Kings College, Strand, London by Sir StClair Thomson, on Thursday June 23rd at 5 P M The chairman will be Sir Arthur Keith F R S The lecture is primarily intended for the medical students of London who were unable to attend the official celebrations held during the Easter vacation At 4.30 P.M. a wreath will be placed on the memorial tablet outside the chapel by the President of the Medical Society

LIVINGSTONE COLLEGE —On June 10th Commemoration Day was celebrated at the College The Chairman was Sir John Rose Bradford President of the Royal College of Physicians who spoke of the recent great advance in the work of hospitals, in the technique of medicine, in the recognition and treatment of disease, and further still in the work of nurses and almoners, who had to receive some medical training before they could carry out their duties efficiently This showed that the attitude of the medical profession to those outside it had altered somewhat of late there was not the same feeling of mystery over the profession as in former days, and it was recognised that the problems of medicine were so urgent and difficult and complex that all the aid was required that could possibly be got While expert professional knowledge was essential as regards the treatment of disease, it was very necessary that there should be knowledge of lesser degree, and medicine owed a lot to such people as missionaries who without any expert knowledge of medicine had yet thanks to the training that they had received at such colleges as Livingstone College rendered a great service to medicine. A little knowledge was capable of being of great service. He had been much impressed by the reports he had read from students of the College in all parts of the world As missionaries they were often in situations where medical aid could not be got, and the training they had received was of immense value not only in treating but in preventing disease.

LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY —The annual general meeting was held at Victory House Leicester-square London, W on June 8th Sir John Rose Bradford the President, being in the chair In proposing that the annual report and statement of accounts should be adopted, the President called attention to the increase in the work of the Society and the gravity of some of the cases which they had had to defend The membership of the Society had increased considerably, being now in the region of 10 000 Even now the membership of this Society and its sister society did not account for more than about 50 per cent. of the medical profession of the country That those who did not join a defence society ran very great risks was exemplified in one or two recent cases The President emphasised the importance of members in any difficulty coming first to the Society before taking any action and of making full use of X ray examination in the treatment of fractures The President referred to the large accumulated fund recorded in the financial statement, which fund made it possible to conduct to a successful issue very expensive cases Dr C M Fegen, in proposing the re-election of Sir John Rose Bradford as President referred to his untiring efforts on behalf of the Society Mr P Sidney Spokes seconded the motion which was carried unanimously as was also a motion for the re-election of Vice-Presidents, members of council and other officers a special vote of thanks being given to the Society's solicitors, Messrs Le Brasseur and Oakley

Parliamentary Intelligence.

HOUSE OF COMMONS.

MONDAY JUNE 13TH

Exchequer Grants to Voluntary Hospitals

Mr LUNN asked the Minister of Health the total amount allocated from the Exchequer in aid of voluntary hospitals since 1918 and whether the Voluntary Hospitals Commission was still in existence and had the power to give further financial assistance, and to what extent —Sir KINGSLEY WOOD replied . Excluding contributions towards specific grant-aided services, the total Exchequer grants in aid of the general expenses of voluntary hospitals since 1918 have amounted to £500 000 voted by Parliament on the recommendation of Lord Cave s Committee. The voluntary Hospitals Commission is still in existence, but it has no funds at its disposal

Amendment of Law of National Health Insurance

Captain FRASER asked the Minister of Health if, in view of the fact that ex-Service men who were new entrant voluntary contributors under the Widows', Orphans', and Old Age Contributory Pensions Act 1925 must be regarded as subject to a reduction of sickness and disablement benefit while in receipt of a 100 per cent pension or allowances unless they had satisfied the requalification conditions of Section 60 (1) Provision (1) and (2), of the National Health Insurance Act of 1924 during their previous period of insurance he would undertake that an amendment of the law would be made forthwith in order to relieve approved societies of the penalties arising from over-payment which they had in good faith already made —Sir KINGSLEY WOOD replied It is intended to include in the amending Health Insurance Bill arising out of the report of the Royal Commission provision to meet the difficulty to which the hon and gallant Member calls attention

TUESDAY JUNE 14TH

Poor-law Relief

Mr LUNN asked the Minister of Health the number of able-bodied men and women in receipt of Poor-law relief in the months of January February March and April, 1926 and 1927 —Mr CHAMBERLAIN replied · Figures based on a classification distinguishing "able-bodied" persons are not now obtained The average numbers of males over 16 years of age ordinarily engaged in some regular occupation and the average numbers of females over 16 years of age who were ordinarily so engaged or were the dependent wives of men ordinarily so engaged who were in receipt of domiciliary Poor-law relief in England and Wales during the months of January, February, March and April, 1926 and 1927 were as follows —

Average Numbers

	1926		*1927*	
	Males	*Females*	*Males*	*Females*
January	150 448	135 953	177 054	153 800
February	149,648	133,914	159 451	137 201
March	145,691	129,786	150,644	129 255
April	142,048	125,775	141,311	121,874

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED

JUNE 4TH 1927.

Notifications —The following cases of infectious disease were notified during the week —Small-pox. 254 (last week 266) , scarlet fever 1671 · diphtheria. 792 ; enteric fever, 59 ; pneumonia 1036 . puerperal fever, 36 puerperal pyrexia 102 cerebro-spinal fever, 11 acute poliomyelitis 1 acute polio-encephalitis 3 encephalitis lethargica 28 ; continued fever 2 dysentery 6 ophthalmia neonatorum 125

Cases of small-pox were notified from the counties of Derby 4 Durham 150 Lancaster 7, Northumberland 6 Yorks North Riding 2, West Riding 48 Monmouth 37 None was reported from London Kent, Middlesex, Nottingham, Stafford, Surrey, or Glamorgan.

Deaths —In the aggregate of great towns including London there were no deaths from small-pox 1 (0) from enteric fever 35 (1) from measles 5 (1) from scarlet fever 30 (7) from whooping-cough 26 (9) from diphtheria 49 (10) from diarrhœa and enteritis under two years and 12 (7) from influenza The figures in parentheses are those for London itself

Medical Diary.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole street, W

Tuesday, June 21st —5 30 P M, General Meeting of Fellows

Thursday —8 30 P M Urology Demonstration Mr Frank Kidd A Series of Specimens illustrating the Range of the Operation of Nephro-Ureterectomy

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S W

Tuesday, June 21st —5 P M, Sir F Gowland Hopkins The Task of Biochemistry (Last Croonian Lecture)

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N

Monday, June 20th —2 30 P M to 5 P M, Medical, Surgical, and Gynæcological Clinics Operations

Tuesday —2 30 P M to 5 P M, Medical Surgical, Throat, Nose, and Ear Clinics Operations

Wednesday —2 30 P M to 5 P M, Medical, Skin, and Eye Clinics Operations

Thursday —11 30 A M, Dental Clinic 2 30 P M to 5 P M, Medical, Surgical, and Ear, Nose and Throat Clinics Operations

Friday —10 30 A.M, Throat, Nose, and Ear Clinics 2 30 P M to 5 P M, Surgical, Medical and Children's Diseases Clinics Operations 4 30 P M, Special Demonstration on selected cases of Nerve Diseases

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole street, W

Monday, June 20th, to Saturday June 25th —Fellowship of Medicine Demonstrations Mon, at 2 30 P M; at Prince of Wales's Hospital, medical demonstration by Dr A J Whiting Wed, at 4 P M, at the Royal Free Hospital, surgical demonstration by Mr C A Joll on Surgical Treatment of Goitre Fri, at 3 P M, at Royal Eye Hospital, ophthalmic clinical demonstration by Mr Griffith The demonstrations are free to all members of the medical profession —Blackfriars Skin Hospital Blackfriars, S E Course of instruction in the Out patient Department every afternoon from 2 30 P M A special demonstration of interesting cases will be given on Tues —Children's Clinic, Cosway street, N W Lectures and demonstrations on Diseases of Children Afternoons and some mornings Further information from the Secretary

LONDON SCHOOL OF DERMATOLOGY, St John's Hospital, 49 Leicester square W C

Tuesday, June 21st —5 P M, Dr J E M Wigley Napkin-Area Eruptions in Infants

Thursday June 23rd —5 P M, Dr W Griffith Bullous Eruptions

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W C

Thursday, June 23rd —4 P M, Dr Nabarro Vaccine Therapy

ROYAL NORTHERN HOSPITAL, Holloway road, N

Tuesday, June 21st —3 15 P M, Mr C L Gimblett Eye Disease as a Complication of Sepsis Elsewhere

ST JOHN'S HOSPITAL DERMATOLOGICAL SOCIETY

Wednesday, June 22nd —5 P M (St John's Hospital, Leicester square), Annual oration by Dr H Haxthausen (Copenhagen) Streptococcal Pityriasis

UNIVERSITY OF SHEFFIELD POST GRADUATE CLINICS

Tuesday, June 21st —3 30 P M (at the Jessop Hospital), Mr Stacey Treatment of Pelvic Inflammation

Friday —3 30 P M (at the Royal Infirmary), Mr Finch Clinical Cases

Appointments.

Shore, L R, M B, B Chir Camb has been appointed Lecturer in Anatomy, Witwatersrand University, Johannesburg

Liverpool Cancer Hospital Ramsden, Prof W, M D, B Ch Oxf, Honorary Consulting Biochemist, and Roberts, R E, B Sc, M D Liverp, Honorary Consulting Radiologist

Certifying Surgeons under the Factory and Workshop Acts Sweetnam, T C A, M D, B Ch Dub (Hemsworth, W Riding), Campbell, J (Birtley, Durham)

Vacancies.

For further information refer to the advertisement columns

Barry U.D C Accident and Surgical Hospital —H S At rate of £200

Bolingbroke Hospital, Wandsworth Common, S W —Res M O £200

Bristol General Hospital —Hon Asst S to Ear, Nose and Throat Dept

Bury Infirmary —Third H S At rate of £150

Cambridge, Addenbrooke's Hospital —Cas O At rate of £130

Cancer Hospital Fulham-road, S W —H S At rate of £100

City of London Hospital for Diseases of the Heart, Victoria Park, E —Asst Tuberculosis O £600

East London Hospital for Children, &c, Shadwell, E —Res M O £200

Federated Malay States, Central Mental Hospital —Second Asst. Med Supt £700

Finsbury Metropolitan Borough —Asst M O H £700

Golden-square, Throat, Nose and Ear Hospital —Hon Anæsthetist.

Huddersfield, Storthes Hall Mental Hospital, Kirkburton —Jun. Asst M O £400

Ipswich, East Suffolk and Ipswich Hospital —H S and Cas O £100

Leeds Public Dispensary —Jun Res M O £150

London Temperance Hospital, Hampstead road N W —H P At rate of £100 Also Cas O At rate of £120

Maidstone, Kent County Ophthalmic and Aural Hospital —Ophth H S At rate of £200

Manchester, Ancoats Hospital —Res M O At rate of £150

Manchester, Crossley Sanatorium, Delamere Forest, Cheshire —Asst M O £200

Merseyside Borough Health Education Committee —Lecturer Organiser £400 for six months

Middlesex Hospital Medical School, London, W —Second Demonstrator for Physiology Dept £350

Middlesex Hospital Medical School, Bland Sutton Institute of Pathology —Asst for Cancer Research £350

Miller General Hospital, Greenwich road, S E —Cas O and H S £150 and £125 respectively

Ministry of Health —M O £600

Northampton County Borough Education Committee —Asst Sch Dentist £450

Nottingham Children's Hospital —Res H S At rate of £150

Penshurst, Kent, Cassel Hospital for Functional Nervous Disorders Res M O £350

Reading, Royal Berkshire Hospital —H P, Second H S, Third H S Each at rate of £150

Royal Army Medical Corps —Commissions

Royal Waterloo Hospital for Children and Women, Waterloo road, S E —H P At rate of £100 Also Asst Radiologist £50

Royal Westminster Ophthalmic Hospital, King William street, West Strand W C —Refraction Asst At rate of £100

St Helens County Borough —Deputy M O H £700

St Mark's Hospital for Cancer, &c, City road, E C —Clin Assts

St Marylebone General Dispensary, 30 Marylebone lane, W —Hon S to Ear, Nose, and Throat Dept

Salford Royal Hospital —H P and H S's Each at rate of £125

Sheffield, Jessop Hospital for Women —Two Asst H S's Each at rate of £100

Sheffield Royal Infirmary —H P At rate of £80

Shotley Bridge, Mental Deficiency Colony —M O £50

Southampton, County of —Medical Adviser £700

Southampton, County Borough —Asst M O H £600

Southampton, Royal South Hants and Southampton Hospital —H P £150

South London Hospital for Women, Clapham Common, S W —Asst P

Sutton, Surrey, Downs Hospital for Children —Jun Asst M O £500

University of London —External Examinerships

Warwickshire County Council —Asst County M O H £600

Worksop, Victoria Hospital —H S At rate of £170

The Chief Inspector of Factories announces the following vacant appointments for Certifying Factory Surgeons Great Haseley, Oxfordshire, and Filey, York, E R

Births, Marriages, and Deaths.

BIRTHS

Crook —On June 5th, at South Eaton place, London, S W, the wife of Eric A Crook, F R C S, of a daughter

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Notes, Comments, and Abstracts.

THE CARE OF THE MENTALLY DEFECTIVE *

By Sir Robert Armstrong-Jones, C B E , M D , F R C P Lond ,
LORD CHANCELLOR'S VISITOR IN LUNACY

There are certainly over 150,000 weak-minded persons at the present moment in England and Wales who need protection and care on account of their mental and physical infirmity Technically, they are described as aments They are all suffering from disease, a structural and organic defect of the brain, and are unlikely to be permanently cured Of this number, 55,000 are admittedly in need of supervision, whilst only about 1 in 3—i e , about 21,000, or, roughly, 1 in 8 of the total number—are actually under recognised control These are being cared for in institutions of six kinds, which are in existence under the Mental Deficiency Act, 1913 The available accommodation may be classified as follows —

1 *State institutions*, managed entirely by the Board of Control —One at Rampton, near Nottingham, cares for about 500 of the most incorrigible, unmanageable, and wrongdoers of the mentally defective class These are of all ages, they are unfit to be at large, and most of them must need permanent protection Another institution is the one at Warwick for 50 girls These are taught useful work, and are mainly trained for domestic service They live together in a hostel, and their surroundings are made to correspond as much as possible with those of normal people Some of them go to work in the neighbourhood, but live in the hostel Their employers are fully informed of their infirmities before they are engaged, so that they may adapt themselves as far as can be to meet their defects So successful is the training here that many of the patients obtain permanent situations, and the girls are happy, for they are encouraged to feel there is some hope for them, and that there is something to work for , in consequence there is a good feeling, good order and method, and there is no resentment against those who are placed in charge

2 *The certified institutions* (certified by the Board of Control) include Royal Earlswood Institution, Royal Albert, at Lancaster, and Royal Eastern Counties, at Colchester There are altogether 76 in the country , 23 of them are provided by local authorities, and the remaining 53 by philanthropic bodies and private munificence Altogether they provide about 13,000 beds

3 *Certified houses*—These are owned and managed by private persons for profit, and are certified for the reception of defectives by the Board of Control They are of the status of our private asylums and licensed houses for the insane, and they receive about 300 patients, all of whom pay for their maintenance

4 *Approved homes* provide accommodation for about 400 The patients are either supported by relatives and friends, or are paid for by local authorities, such as boards of guardians The homes are approved by the Board of Control

5 *Poor-law institutions*—Under Section 37 of the Act, the Poor-law institutions throughout the country may receive mental defectives, and there are about 6000 cases so housed. About one-third of them are in the Metropolitan Asylums Board's certified institutions in London. All the institutions mentioned are inspected by the Board of Control

6 Lastly, there are cases under *guardianship* and those in *private care* At the present time throughout England and Wales there are about 800 mental defectives under guardianship , among them there are nearly twice as many girls and women as there are boys and men These cases are placed out under suitable conditions of care, control, and training It has always been possible, where cases prove unsuited to these conditions, to transfer them back to institutions , but by an Amendment Act, 1925, it is now possible to transfer cases from institutions to guardianship—a great improvement It is strongly urged, however, that before such a transfer is made, patients should be discharged from the institution for six months' trial on "licence," as it is called This enables them to go into a family and to return if necessary, without the trouble of securing the "varying order," if the trial on guardianship is not a success It is the local authority that must—if necessary—apply for the varying order to the judicial authority, and with the parents' consent. The paramount difficulty in guardianship is to find suitable guardians ; the parents are sometimes very unsuitable

Control and Education

As is well known, all registered mental cases are under legal control The Lunacy Act, 1890 and since, deals with the insane, sometimes referred to as dements For their control a medical certificate is required (two for private patients) and a justice's order The Mental Deficiency Act, 1913, deals with persons who are mentally defective "from birth or from an early age," described as aments In their case, also, two medical certificates are required, together with a petition and an order

The local education authority is bound by statute to provide free education for all children, including mentally defective children, by the Act of 1899, special schools being provided if necessary The age for defectives is from 7 to 16 It is further the duty of the education authority to notify the local authority when certain mental defectives need subsequent supervision—i e , when they are suitable for guardianship Voluntary associations have undertaken the task of supervision in the case of nearly 16,000 children, which shows the immense amount of voluntary work done for this class, whilst 15,000 cases are statutory supervision cases, being visited in their own homes by paid officers, as well as by voluntary social workers Another duty which is imposed by statute upon the local authority is described as ascertainment, they have to find out the number and names of mental defectives in their districts Seventy-one local authorities, however, have appointed no special officers to do this work, although there is a statutory committee in each district It is often difficult to bring these cases under the Act, unless they are being neglected, and to prove neglect is not easy even when one or both of the parents is mentally defective

A third duty of local authorities is to provide "suitable and sufficient" accommodation for all mental defectives who are certified, or are ordered to be sent into institutions At present this is utterly inadequate, as only 17 out of a possible 124 local authorities have so acted, and only 5000 beds have been provided Because the amount of accommodation is so small, it is impossible to secure a proper classification of the cases, which is of paramount importance in training and treatment So inadequate was the accommodation provided, that the Minister of Health, as far back as three years ago, urged the various local authorities (through the Board of Control) to reconsider their legal responsibility, and to submit various schemes for housing, training, and protecting the members of this class, as only accommodation for about 1 in 8 was then arranged for

Again, not only is ascertainment a statutory obligation, but supervision and guardianship are also necessary Yet inquiry shows that only 53 local authorities out of 124 in England and Wales have appointed their own special officers for this work, the others delegate their responsibility to voluntary associations or to health officers, relieving officers, welfare workers, district nurses, and school attendance officers In some instances the secretary of the voluntary association has the duty of ascertainment, supervision, and guardianship, and it is a heavy task even when the official is highly trained, because the necessary information for treatment has to be obtained from many different sources It has to be got not only from the education authority, but also from the police-courts, from probation officers, and even from the local asylums, apart from what is derived from boards of guardians or medical officers of health Although 55,000 cases need care, accommodation is provided for 1 in 3 of these.

All weak-minded persons need protection, care, and control, not only on account of inability and incapacity to maintain an independent existence themselves, but also because, when neglected, they become a danger to the community, committing crimes, spreading disease, and often propagating their inherited deficiencies

Epidemic Encephalitis and Its Results

The reappearance of an old disease, described in the sixteenth century and now known as epidemic encephalitis, has given the community much anxious thought owing to its permanently disabling effects on the bodies and minds of its victims The disease is fatal to 50 per cent. of those attacked, and most of those who survive are never the same again , about 200 of these are already in asylums, 100 more are in mental deficiency institutions, and many are wrecks and derelicts cared for in our workhouse infirmaries Two-thirds of them are juveniles, and many of them commit anti-social acts and are to be seen in the juvenile courts It is only recently, however, that any public authorities have provided special places for them, and only London and Lancashire have done this There are 100 beds at Winchmore Hill, in the north of London, and there are 30 at West Park Asylum, Epsom, where the subjects of this disease are studied and where school classes, exercise games, and suitable occupation is provided The great difficulty has been to bring these cases under the provisions of the Act of 1913, as the disease is not "from an early age or from

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* Abridged address delivered before the Brighton Guardianship Society for the Care of the Feeble minded on May 31st, 1927

Medical Diary.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W
  Tuesday, June 21st —5 30 P M, General Meeting of Fellows
  Thursday —8 30 P M Urology Demonstration Mr Frank Kidd A Series of Specimens illustrating the Range of the Operation of Nephro Ureterectomy

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S W
  Tuesday, June 21st —5 P M, Sir F Gowland Hopkins The Task of Biochemistry (Last Croonian Lecture)

NORTH-EAST LONDON POST GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N
  Monday, June 20th —2 30 P M to 5 P M, Medical, Surgical, and Gynæcological Clinics Operations
  Tuesday —2 30 P M to 5 P M, Medical Surgical, Throat, Nose, and Ear Clinics Operations
  Wednesday —2 30 P M to 5 P M, Medical, Skin, and Eye Clinics Operations
  Thursday —11 30 A M, Dental Clinic 2 30 P M to 5 P M, Medical, Surgical, and Ear, Nose and Throat Clinics Operations
  Friday —10 30 A M, Throat, Nose, and Ear Clinics 2 30 P M to 5 P M, Surgical, Medical and Children's Diseases Clinics Operations 4 30 P M, Special Demonstration on selected cases of Nerve Diseases

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole street, W
  Monday, June 20th to Saturday, June 25th —Fellowship of Medicine Demonstrations Mon, at 2 30 P M; at Prince of Wales's Hospital, medical demonstration by Dr A J Whiting Wed, at 4 P M, at the Royal Free Hospital, surgical demonstration by Mr C A Joll on Surgical Treatment of Goitre Fri, at 3 P M, at Royal Eye Hospital, ophthalmic clinical demonstration by Mr Griffith The demonstrations are free to all members of the medical profession —Blackfriars Skin Hospital, Blackfriars, S E Course of instruction in the Out-patient Department every afternoon from 2 30 P M A special demonstration of interesting cases will be given on Tues —Children's Clinic, Cosway street, N W Lectures and demonstrations on Diseases of Children Afternoons and some mornings Further information from the Secretary

LONDON SCHOOL OF DERMATOLOGY, St John's Hospital, 49, Leicester square, W C
  Tuesday, June 21st —5 P M, Dr J E M Wigley Napkin-Area Eruptions in Infants
  Thursday, June 23rd —5 P M, Dr W Griffith Bullous Eruptions

HOSPITAL FOR SICK CHILDREN, Great Ormond street, W C
  Thursday, June 23rd —4 P M, Dr Nabarro Vaccine Therapy

ROYAL NORTHERN HOSPITAL, Holloway road, N
  Tuesday, June 21st —3 15 P M, Mr C L Gimblett Eye Disease as a Complication of Sepsis Elsewhere

ST JOHN'S HOSPITAL DERMATOLOGICAL SOCIETY
  Wednesday, June 22nd —5 P M (St John's Hospital, Leicester square), Annual oration by Dr H Haxthausen (Copenhagen) Streptococcal Pityriasis

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS
  Tuesday, June 21st —3 30 P M (at the Jessop Hospital), Mr Stacey Treatment of Pelvic Inflammation
  Friday —3 30 P M (at the Royal Infirmary), Mr Finch Clinical Cases

Appointments.

Shore, L R, M B, B Chir Camb, has been appointed Lecturer in Anatomy, Witwatersrand University, Johannesburg

Liverpool Cancer Hospital Ramsden, Prof W, M D, B Ch Oxf, Honorary Consulting Biochemist, and Roberts, R E, B Sc, M D Liverp, Honorary Consulting Radiologist

Certifying Surgeons under the Factory and Workshop Acts Sweetnam, T C A, M D, B Ch Dub (Hemsworth, W Riding), Campbell, J (Birtley, Durham)

Vacancies.

For further information refer to the advertisement columns

Barry, U D C Accident and Surgical Hospital —H S At rate of £200
Bolingbroke Hospital, Wandsworth Common, S W —Res M O £200
Bristol General Hospital —Hon Asst S to Ear, Nose and Throat Dept
Bury Infirmary —Third H S At rate of £150
Cambridge, Addenbrooke's Hospital —Cas O At rate of £130
Cancer Hospital, Fulham-road, S W —H S At rate of £100
City of London Hospital for Diseases of the Heart, Victoria Park, E —Asst Tuberculosis O £600
East London Hospital for Children, &c, Shadwell, E —Res. M O £200
Federated Malay States, Central Mental Hospital —Second Asst. Med Supt £700
Finsbury Metropolitan Borough —Asst M O H £700
Golden-square, Throat, Nose and Ear Hospital —Hon Anæsthetist.
Huddersfield, Storthes Hall Mental Hospital, Kirkburton —Jun. Asst M O £400
Ipswich, East Suffolk and Ipswich Hospital —H S and Cas O £100
Leeds Public Dispensary —Jun Res M O £150
London Temperance Hospital, Hampstead road, N W —H P At rate of £100 Also Cas O At rate of £120
Maidstone, Kent County Ophthalmic and Aural Hospital —Ophth H S At rate of £200
Manchester, Ancoats Hospital —Res M O At rate of £150
Manchester Crossley Sanatorium, Delamere Forest, Cheshire —Asst M O £200
Merseyside Borough Health Education Committee —Lecturer Organiser £400 for six months
Middlesex Hospital Medical School, London, W —Second Demonstrator for Physiology Dept £350
Middlesex Hospital Medical School, Bland-Sutton Institute of Pathology —Asst for Cancer Research £350
Miller General Hospital, Greenwich road, S E —Cas O and H S £150 and £125 respectively
Ministry of Health —M O £600
Northampton County Borough Education Committee —Asst Sch Dentist £450
Nottingham Children's Hospital —Res H S At rate of £150
Penshurst, Kent, Cassel Hospital for Functional Nervous Disorders Res M O £350
Reading Royal Berkshire Hospital —H P, Second H S, Third H S Each at rate of £150
Royal Army Medical Corps —Commissions
Royal Waterloo Hospital for Children and Women, Waterloo road, S E —H P At rate of £100 Also Asst Radiologist £50
Royal Westminster Ophthalmic Hospital, King William street, West Strand W C —Refraction Asst At rate of £100
St Helens County Borough —Deputy M O H £700
St Mark's Hospital for Cancer, &c, City road, E C —Clin Assts
St Marylebone General Dispensary, 30, Marylebone lane, W —Hon S to Ear, Nose, and Throat Dept
Salford Royal Hospital —H P and H S's Each at rate of £125
Sheffield, Jessop Hospital for Women —Two Asst H S's Each at rate of £100
Sheffield Royal Infirmary —H P At rate of £80
Shotley Bridge Mental Deficiency Colony —M O £50
Southampton, County of —Medical Adviser £700
Southampton, County Borough —Asst M O H £600
Southampton, Royal South Hants and Southampton Hospital —H P £150
South London Hospital for Women, Clapham Common, S W —Asst P
Sutton Surrey, Downs Hospital for Children —Jun Asst M O £500
University of London —External Examinerships
Warwickshire County Council —Asst County M O H £600
Worksop, Victoria Hospital —H S At rate of £170

The Chief Inspector of Factories announces the following vacant appointments for Certifying Factory Surgeons Great Hasceley, Oxfordshire, and Filey, York, E R.

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Macewen Memorial Lecture

ON THE

MENINGIOMAS ARISING FROM THE OLFACTORY GROOVE AND THEIR REMOVAL BY THE AID OF ELECTRO-SURGERY.*

Delivered in the University of Glasgow on June 21st, 1927,

BY HARVEY CUSHING, C B , F R C S ENG ,
PROFESSOR OF SURGERY IN HARVARD UNIVERSITY

To know before operating, not only *where* a growth is to be found but *what* its nature will be, must be one's aim if he is successfully and intelligently to deal with an intracranial tumour of any kind Forewarned is to be forearmed, and nothing may be more disconcerting in this particularly difficult sort of surgery than, when ill-prepared, to turn down possibly an insufficiently large bone-flap and to stumble unawares upon a large vascular meningioma What was looked forward to as a simple procedure may suddenly be transformed into one of magnitude and exceptional gravity And by ill-prepared I mean without the precaution of having raw muscle at hand for implantation ; of having the patient's blood grouped, a donor selected, and a separate team prepared to give a transfusion , and possibly, too, of having at hand the electro-surgical adjunct to which I particularly wish to call attention in this Macewen Lecture . .

There is, perhaps, a special justification in the selection of this topic for consideration here in Glasgow as a compliment not only to Macewen, whose early operation for a frontal meningioma has been referred to, but out of deference as well to his colleague John Cleland What is more, if one may correctly interpret an account of an operation for a " tumour of the hypophysis " as described by Macewen, he had actually encountered and removed, in part at least, one of these very lesions in question [1]

In an address [2] given a few years ago in which the meningeal tumours were dealt with from a general point of view, I had the satisfaction of pointing out that Prof Cleland had probably been the first to make clear that *they originate from the cells of the pia arachnoid rather than from the dura as commonly supposed* [3] One of the tumours which he had studied had been found while dissecting the body of a female said to have been 50 years old, who for many years had been an epileptic with impaired mental faculties and who had finally died of bronchitis Cleland's sketch of the lesion (Fig 1) shows a symmetrically placed olfactory-groove meningioma of moderate size, of which he gave the following excellent description .—

> The tumour was seen upon more careful examination to be closely adherent to the crista galli and cribriform plate of the ethmoid It was deeply cleft in front by the falx cerebri, which, however, was quite free from it, nearly to its base Near its base it was attached to the dura mater by delicate tissue, quite distinct from the proper texture of the membrane, and which was easily divided with a needle. In this way it could be detached from the dura mater as far as the orifices of the larger perforations in the mesial border of the cribriform plate with the processes of dura mater lining which it appeared to be closely connected By its bulk it had pressed not only on the brain, but to a slight extent on the left orbital wing of the sphenoid The surface was nodulated, and partly smooth, partly papillary and villous The villosities when pressed asunder easily allowed deep cracks to open between them. .
>
> When a transverse vertical section had been made, the cut surface exhibited a uniform appearance similar in colour to the grey matter of the brain The centre of the section passed through a small irregular plate of bone about a couple of lines deep and twice as long, placed vertically in the mesial line, about half an inch above the crista galli and slightly connected with the falx in front It presented the lacunæ and canaliculi of true bone, and was exactly similar to the ossification frequently met with in the edge of the falx
>
> Small portions of the tumour, prepared for microscopic inspection, when slightly rubbed against the glass cover, allowed a large quantity of granular matter to separate from them rendering opaque the fluid in which they were A large bulk of the tumour consisted of such matter, which was composed in great part, if not entirely, of nucleated cells, of which numbers were seen about 1–3000th of an inch in diameter But the most remarkable elements of the tumour were of a concretionary character, partly based on the cellular, partly on the fibrous element. The cellular concretions were round structures, strongly refracting *light, and capable of being cracked by pressure of the glass cover* The largest of them were about 1-200th of an inch in diameter, and much resembled the corpora amylacea found in brain substance, or spherical prostatic concretions

This particular tumour Cleland called a " villous tumour of the arachnoid," and he conceived that it *perhaps originated from the pacchionian corpuscles* But he was not the first to picture one of these lesions ; Cruveilhier 30 years before had given in his celebrated atlas [4] an excellent illustration (Fig 2) of a similar case Tumours of this sort unexpectedly encountered in a post-mortem examination have naturally aroused interest and the specimens are apt to find their way into pathological museums There is a typical example labelled psammoma, in the Charcot Museum at the Salpêtrière (Spec D III 16), and in the Museum of the Royal College of Surgeons in London may be seen (No 1452 1) a small tumour which serves to indicate, better than do the larger ones their characteristic point of origin (Fig 3) Virchow, in his classical work on tumours,[5] describes and pictures just such a case, the small, cherry-sized growth having been situated " close behind the crista galli and the attachment of the falx in the median line "

My first personal experience with one of these olfactory-groove tumours was 16 years ago , and during the life of the patient I had no preconception of what the lesion would prove to be The tumour had advanced to such a stage that there was complete blindness, mental deterioration, and distressing headaches There were also unmistakable evidences of pituitary insufficiency, with a sella turcica shown by the X ray to be largely destroyed A subtemporal decompression was performed without avail and the poor man not long afterwards was released by death from his troubles

Owing to my special interest at the time in pituitary disorders the case happened to be reported [6] as an example of hypopituitarism secondary to an adjacent tumour The photographs (Figs 4–6) show that the lesion had attained a large size ; had spread backwards so as to overlie and compress the pituitary body ; had extended into the ethmoid cells ; and what the photograph does not show, had forced its way without invading the brain into every crack and cranny of the neighbourhood even down into the sheaths of Schwalbe almost as far as the eyeball One of these tumours in this terminal stage is, of course, hopelessly inoperable, and in 1911 when this case was observed, I little expected ever to see another example birth," and Mr Compton Wood, M P, has brought in a Bill, acceptable to all parties to enable cases of this kind, who must be kept a long time under supervision, to be properly cared for

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* The first portion of this lecture (here omitted) was devoted primarily to a consideration of the traditions of the Glasgow School of Surgery, and secondarily to a description of certain of the hitherto inoperable meningiomas arising from the floor of the anterior cranial chamber

[1] Macewen, Sir W Brain Surgery, Brit Med Jour , 1922, ii, 169 (Tumours of the Hypophysis)

[2] The Cavendish Lecture The Meningiomas their Source and Favoured Seats of Origin, Brain 1922 xlv , 282–316

[3] Cleland J Description of Two Tumours Adherent to the Deep Surface of the Dura Mater, Glasg Med Jour , 1864, xi , 148–159

[4] Cruveilhier Anatomie Pathologique du Corps Humain Tome 2^{e} Paris 1835–42 Livraison viii^{e}, Pl 3

[5] Die Krankhaften Geschwülste Berlin 1864–5 *Zweiter* Band p 115

[6] The Pituitary Body and its Disorders Philadelphia J B Lippincott Co , 1912, Case 8

Conclusion

Even from the standpoint of economy alone, it is most desirable that the whole class of the enfeebled in mind and body should receive care and protection, as well as supervision It is a waste of public money for these weak-minded persons to be cared for expensively until the age of 16 and then to be thrown upon the world, when it is left to the thrifty and the prudent to support them—and often their children—either in prisons as delinquents, or as patients in hospitals and asylums Yet this burden can be relieved by taking action Among the measures suggested are the provision of occupation centres, frequent visiting and supervision of defectives, and the prevention of their marriage I think the question of sterilisation may be disregarded Some authorities advise as the only solution the provision of special colonies with cottage homes and workshops for cases from the age of 1 upwards

PLAGUE PREVENTION AND THE FUMIGATION OF SHIPS

THE United States Quarantine Regulations require that ships entering their ports shall be fumigated every six months but [1] it became known last year that many ships in which there were no rats were being compulsorily disinfected in compliance with regulation Fumigation being not only an expense to the shipowner but a restraint to trade, the Public Health Service determined to inquire whether in some or all ships the six months period might be safely extended provided that inspection of the ship could be shown to furnish a trustworthy estimate of freedom from rats A very complete Inspection Report was drawn up in which the evidence of rat presence in the ship, hold by hold space by space, was to be stated as—none, old, fresh (slight, 1–5 rats, moderate, 5–10, marked, over 10) The signs of rat infestation depended upon were rat droppings, rat runs gnawed woodwork, damage to cargo, rat nests, and rats, alive or dead After this Report had been filled up for 100 ships in which on subsequent fumigation in New York Harbour the number of rats found dead corresponded very accurately with the forecasts, it was clear that the method had approved itself, and a larger test of 200 vessels was made Of these, 91 (uninfested) were excused fumigation, while in the other 109, it was estimated 1786 rats existed Actually 1813 rats were found dead in them after fumigation, a discrepancy of less than 2 per cent Accordingly ships found free from rats by the New York inspectors are no longer compulsorily fumigated This is a great advance, for it now becomes the shipowner's interest to eliminate rats from his ships whether by trapping, rat-proofing, or whatnot, and the risk of spread of rat-carried plague over the world is diminished

PROTECTIVE COLOURING IN WAR

THE news of the impending change in the standard uniform of the French army from horizon blue to khaki will excite the interest of the soldier, the scientist, and the sentimentalist No nation has emphasised the trappings of war more than the French, they have even coined a special and untranslatable word for it, *panache* And perhaps no nation has suffered more severely from this appeal to military ardour through the eye, at Waterloo, for instance, Napoleon was led into fatal delay while he passed his army in review, and in the early days of the Great War thousands of French soldiers were unnecessarily sacrificed to the German machine guns by their uniforms of scarlet and blue

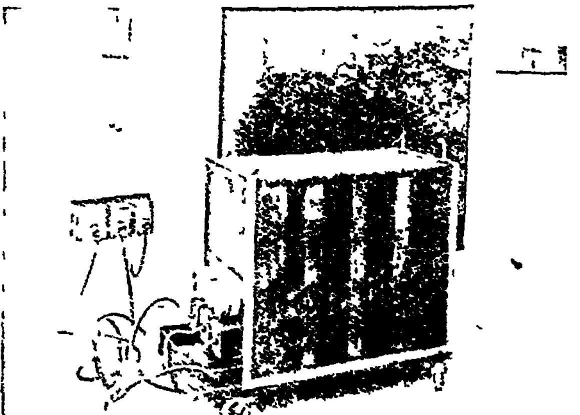
The disadvantage of being conspicuous is sufficiently obvious, but invisibility also has its dangers, and a minor military problem of to-day is to devise new methods of letting the guns know the position of the infantry during an advance, thus preventing occurrences such as the shelling of the crest of Sari Bair after our own men had won it from the Turks

If invisibility is to be the criterion for the colour of a field service uniform, the soldier may well ask what is the scientific evidence which has led to the adoption of khaki by the great majority of the nations Protective mimicry in the animal world merely demonstrates that to be seen with difficulty an object must resemble its background, few natural backgrounds are uniform in colour, so most animals which strive after invisibility are of mixed or variegated shades In this connexion Gérard and Devismes recently tested the visibility of targets of different colours against various backgrounds under various conditions of light [1] The colours chosen were scarlet, green, royal blue white, mouse grey, and dead-leaf brown As might have been expected, mouse grey and dead-leaf brown (defined as the colour of a withered beech leaf) were by far the least conspicuous Between these two there was no practical difference If we grant, however, that grey or brown is less generally visible than blue, the question arises as to which shade of grey or brown is the best and on this point, so far as we know, there is no scientific evidence

The original khaki was introduced for service in India by the Guides about 1848, and was a light dust colour with a hint of orange (Urdu *khak*, dust) With its adoption as a field service dress for the whole army a shade of green crept in, and during the late war almost every variation could be seen The United States and Irish Free State armies emphasise the greenish tint, while the French Colonial army has introduced a rather dark brown element What is required is some research into the production of a tint which will have the greatest possible invisibility under the greatest number of conditions Perhaps the uniform of the future will resemble the young plover in colour, having a pepper-and-salt ground with dark blotches Meanwhile, anyone who has seen a Franco-British attack and remembers, as he must, the long dim khaki lines change suddenly to the challenging horizon blue, will congratulate the French Army on a very wise change

ELECTRIC HEATING INSTALLATION IN AN OPERATING THEATRE

A SUCCESSFUL method of utilising electricity for special heating purposes in exceptionally difficult circumstances has been applied in respect to the operating theatre of the Harwich and District Cottage Hospital This hospital is equipped with a central heating system, and in order that the operating theatre should be kept at a suitable temperature, it was found necessary to keep the main boiler going practically all the year round and at times when it was not required for the general heating of the hospital The problem which faced the managerial staff was to raise the temperature of the operating theatre during periods when the main system was shut down and extra heat was necessary, the process to occupy about 30 minutes The problem was accentuated by the fact that whatever system was employed, owing to the lack of space, the apparatus after performing its duties would have to be of a type easily and quickly removable The solution was the adoption of the portable electric radiator shown in the illustration, which has been a success The apparatus is of the "Magnet" type manufactured by the General Electric Co, Ltd, is loaded to 12 k w, and the desired temperature is raised well within the time required A tray is provided for the flexible tubing so that it may be quickly disposed of when the radiator is wheeled out of the theatre



PRINCESS MARY AT HOSPITALS—Last week Princess Mary had two hospital engagements On Tuesday she opened, at the Kent County Medical Hospital at Barming, near Maidstone, a new nurses' home, which has cost £50,000, and has accommodation for 110 nurses, and on Wednesday she opened the Queen Alexandra wing of the King-Edward Memorial Hospital at Ealing

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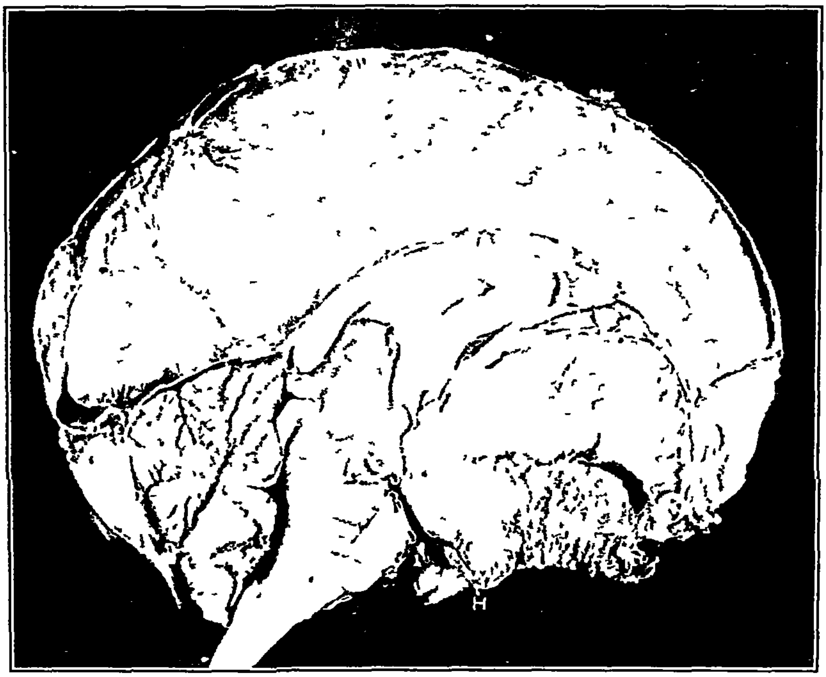
[1] Surgeon C V Akin and Acting Assistant Surgeon G C Sherrard, U S Public Health Service, in Public Health Reports April, 1927

[1] Boigey, M Presse Médicale, April 30th, p 555

FIG 4



Photograph of the tumour in the author's first case (1911) of olfactory groove meningioma (undiagnosed) Note the backward prolongation of the tumour projecting into the pituitary fossa and flattening the hypophysis (H)

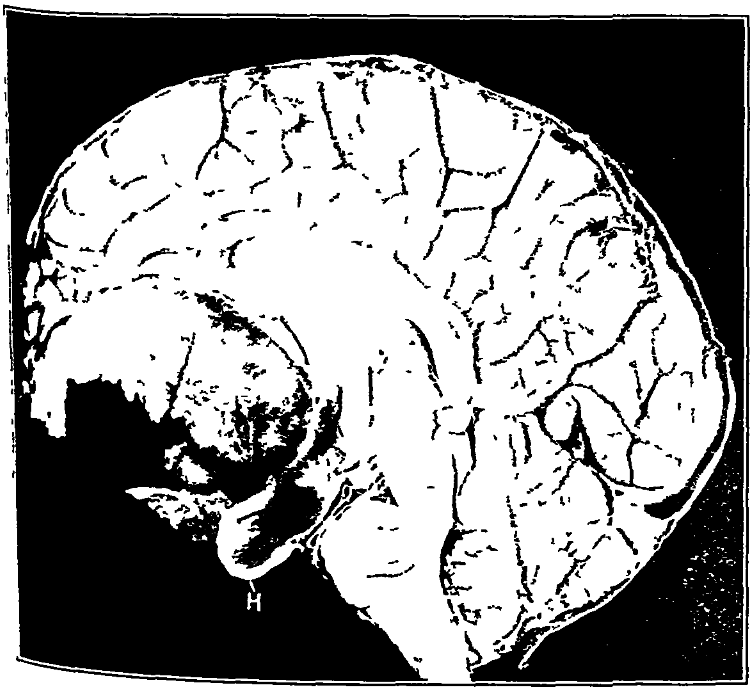
Surg No 15922 *Olfactory-groove meningioma with the syndrome of homolateral optic atrophy, contralateral papillœdema, anosmia, and mental deterioration Partial first-stage excavation and complete second stage removal of growth Sacrifice of bone-flap Recovery* —On Jan. 13th, 1922, Mrs S M, aged 62, was referred to the Brigham Hospital on the advice of Dr Charles H May, of New York, with the complaint of failing mentality and loss of vision

Anamnesia —She had enjoyed excellent health until the midsummer of 1920 when a reduction in vision was first observed By January, 1921, this had progressed to practical blindness in the left eye At this time the fundus in the affected eye showed little change, whereas in the other eye a low grade of papillœdema was present A diagnosis of retrobulbar neuritis had originally been made, but as the papillœdema in the right eye progressed and the nerve-head in the left began to show evident pallor, doubts were felt She was seen in consultation by many persons who made various suggestions, such as aneurysm of the internal carotid, ethmoidal disease, frontal tumour, pituitary tumour An extensive intranasal operation was finally performed without disclosing a trace of infection. This was followed by a prolonged series of X ray exposures of the pituitary region Meanwhile evidences of mental deterioration began to appear, shown by untidiness, loss of memory, euphoria, and other dispositional changes

Examination on Admission —This was quite negative apart from the neurological findings She was a well-nourished and vigorous-appearing woman who admitted no discomforts To be brief, she was found to have (1) *complete anosmia* (which so far as could be told had been lost before the intranasal operation), (2) *a primary atrophy of the left optic nerve* with total blindness, (3) *an atrophic pallor of the left optic nerve, apparently secondary,* vision being reduced to 2/200 and visual fields impossible to take, (4) *mental symptoms* shown in slow cerebration euphoria with incoöperation, loss of memory for recent events, occasional disorientation, and impairment of concentration, (5) *exceedingly inactive deep reflexes*, (6) slight *erosion of the wing of the left sphenoidal ridge* and *pressure enlargement of the sella* shown by the X ray

The presumptive diagnosis of an endothelioma arising from the left olfactory groove was made, and on Jan 20th, under ether-anæsthesia, a low left frontal osteoplastic flap was reflected, the extracerebral tissues being highly vascular An extremely tense dura was disclosed and an immediate subtemporal decompression was made The exploratory brain-needle detected a large firm tumour occupying a large portion of the frontal lobe The bone-flap was replaced for a second session.

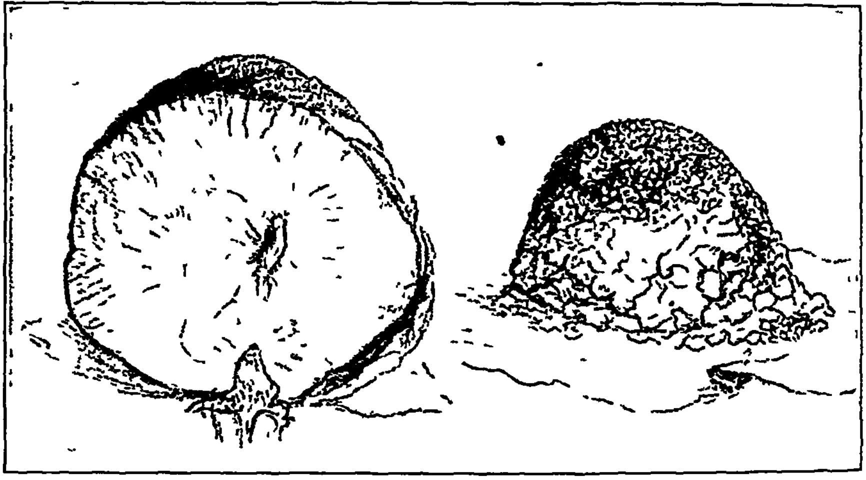
FIG 5



(Cf Fig 4) To show the "nest" in the right frontal lobe after removal of the right half of the symmetrical lesion (cf Fig 6) Note (1) the flattened cup shaped hypophysis (H) (2) the elongated and compressed infundibulum and distorted third ventricle, (3) the ridge made by the elongated anterior communicating artery passing up from the internal carotid.

On the 28th the flap was again reflected and the dura opened along the margin of the sagittal sinus At the lower part of the field the anterior pole of the tumour was disclosed The growth was so nodular and irregular in shape that the brain could not be brushed away from it easily What is more, it proved to be of such an unexpectedly large size that to remove it intact would have caused, through dislocation and contusion, irreparable damage to the enveloping nervous tissue Consequently, the intracapsular method of enucleation, long put in use in the surgical treatment of acoustic tumours, was called upon to get us out of our difficulties Accordingly, with a sharp spoon, However, the lesions prove by no means to be rare Another case of precisely the same kind came to autopsy on March 15th, 1921, after an ineffectual decompression at my hands for an unlocalised (and at the time unlocalisable) tumour The accompanying photographs (Figs 7 and 8) will show how closely the growth resembles the preceding one, its point of origin from the olfactory groove being more apparent as the lesion was not broken in removal (cf Figs 8 and 4), and the photograph of its under surface shows the prolongation of the lesion into the pituitary fossa with backward displacement of the chiasm

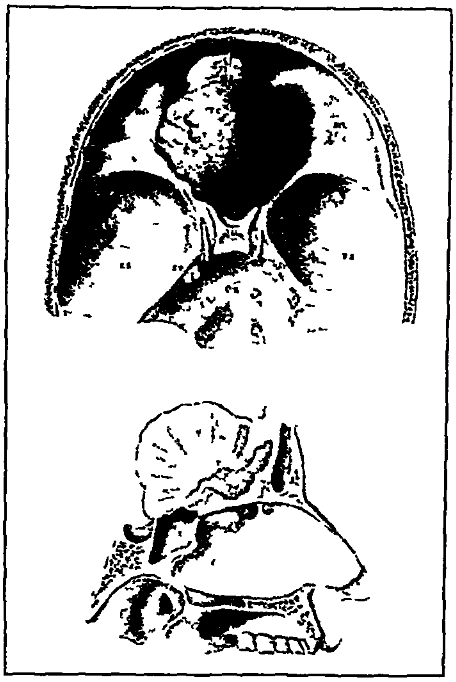
FIG 1



Cleland's sketch showing (1) the tumour on coronal section with the position of the crista galli and the small central area of calcification, (2) the characteristic, finely granular external surface of the lesion

My curiosity naturally enough was aroused by the similarity of these two lesions, and during the intervening years I have gathered, from one source or another, photographic records of other cases, some of which may be here reproduced in order to emphasise how closely in their situation and gross appearance these tumours resemble one another (Figs 9-14) The specimens for the most part represent post-mortem disclosures on patients who, because of mental symptoms, had come to be confined in asylums for the insane and in whom the presence of tumour was unsuspected

FIG 2

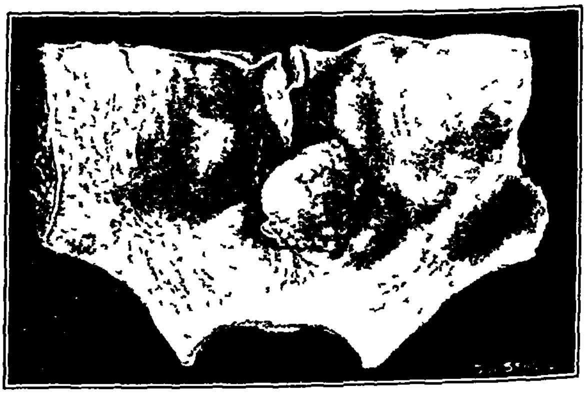


Cruveilhier's illustration (1835) of an olfactory groove meningioma called a ' tumeur cancéreuse des meninges "

Meanwhile our knowledge of these meningiomas of the anterior fossa was increasing year by year so that they could be diagnosed correctly, and now and again one of them was exposed at operation, but at best only partially removed Under ordinary circumstances every effort is made to enucleate a meningeal tumour intact even at the risk of causing greater damage to the brain than would a piecemeal removal But in dealing with one of these large subfrontal tumours the likelihood of further damage to the already impaired mental functions through contusions of the frontal lobe makes such a procedure one of questionable propriety

These meningiomas of the frontal base, as I have said, are apt to be firm and psammomatous in character, and finally in a desperate attack on one of them which happened to be largely unilateral I had been forced into what for me at least, was a new manœuvre, whereby the firm and comparatively non-vascular lesion was gutted or cored, leaving its partly collapsed rind to be removed at a second session Since it was this manœuvre that suggested the adoption of electro-surgical methods for accomplishing the same end with less risk, I shall report the case in full The history, which among other things shows the importance for diagnosis of a chronologically exact sequence of symptoms, will serve as a contrast to the case-history to follow

FIG. 3

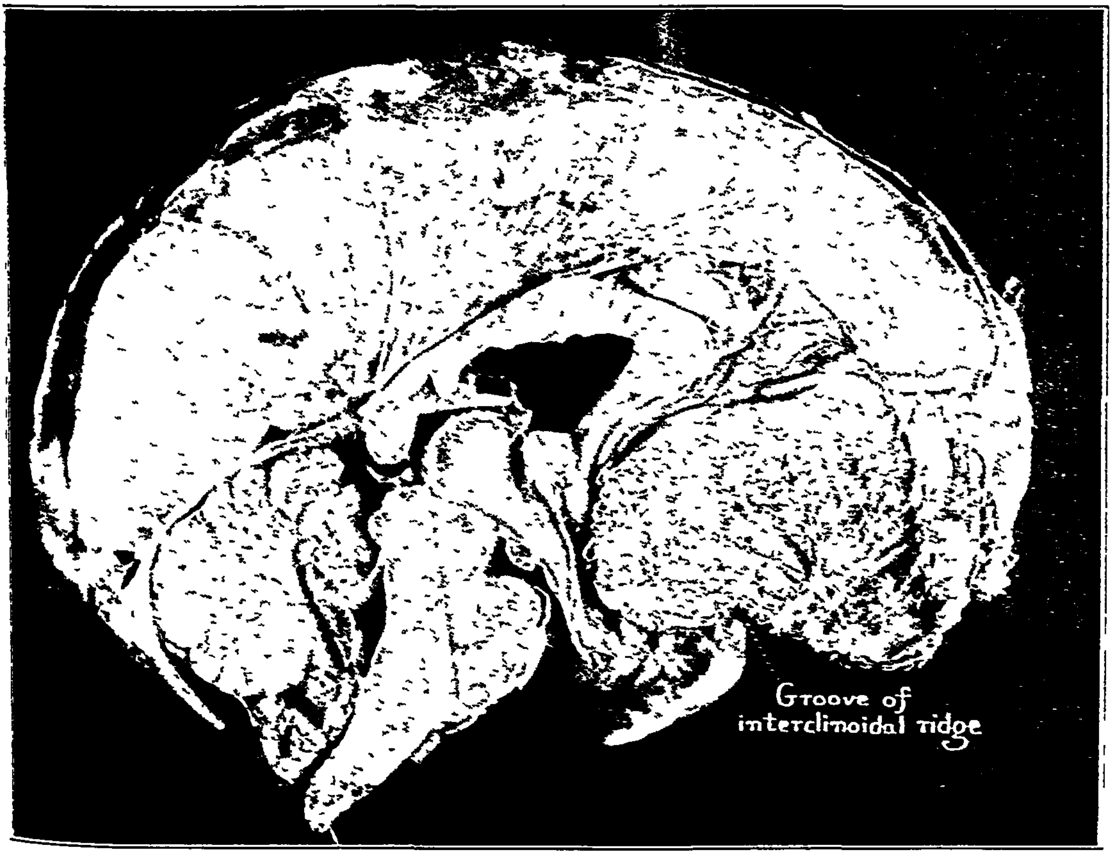


Small olfactory groove meningioma (natural size) from the Museum of the Royal College of Surgeons (London) Kindness of Prof Shattock and (5) also from the same cause, mental symptoms due to compression and deformation of the left frontal lobe

To this particular syndrome attention was first called by Foster Kennedy in 1911 in an article with a somewhat misleading title[7] in which a variety of lesions such as subfrontal abscesses and tumours of various kinds had caused unilateral loss of the sense of smell with an ipsolateral optic atrophy due to direct pressure, and contralateral choked disc due to intracranial tension. In the first of his cases, which had been observed on the service of Sir William Gowers at the National Hospital, Queen-square, there was found at autopsy, after a fatal operation, a subfrontal endothelioma which was said to have originated from the dura over the crista galli.[8]

The tumour in Dr. Kennedy's case, of which he has kindly given me a photograph (Fig. 11), proves to be a bilaterally symmetrical, or fairly symmetrical, meningioma, whereas in the case I have just described in such detail the lesion was largely unilateral. The bilaterally disposed lesions are apparently more common and I know of only one good example in the literature of a large unilateral meningioma of the olfactory groove accompanied by satisfactory illustrations. This case was reported by Blackburn and Hough some years ago[9] The patient was a coloured woman, 36 years of age, who died in the Government Hospital for the Insane. The brief clinical history states that she had been blind for some time, that she had been having epileptiform convulsions, and that there was marked mental impairment which reached an extreme degree of dementia before the end. Tumour was unsuspected. The illustrations show (Figs. 20 and 21) that the growth chiefly involved the right frontal lobe, though the left was markedly indented by it. The tumour, so far as I can judge, occupied precisely the same situation as that removed in the patient under discussion.

FIG. 8



Median section of tumour in author's second case for comparison with Fig. 4. Note the overhang of the tumour posterior to groove of inter-clinoidal ridge; also the cross-section of the anterior communicating artery at the posterior border of the lesion.

Since the weight of this tumour figured by Blackburn and Hough was only 140 g., whereas the total weight of Mrs. M.'s tumour was 204 g. (cf. Figs. 20 and 19), some idea is thereby given of the magnitude of the undertaking. For the removal of this tumour three hazardous major operations were necessitated, with ultimate sacrifice of the bone-flap, leaving an ugly scar. Seven hours, all told, were expended at the operating table, and untold hours at the complicated daily dressings during the tedious postoperative period of cerebro-spinal drainage, all of this necessitated an unduly prolonged hospital sojourn.

My reason for dwelling in such detail upon the operation in this case is for the purpose of contrasting it with a present-day operation upon one of the still more inaccessible bilaterally-placed olfactory-groove meningiomas. As will be seen, the operation can be

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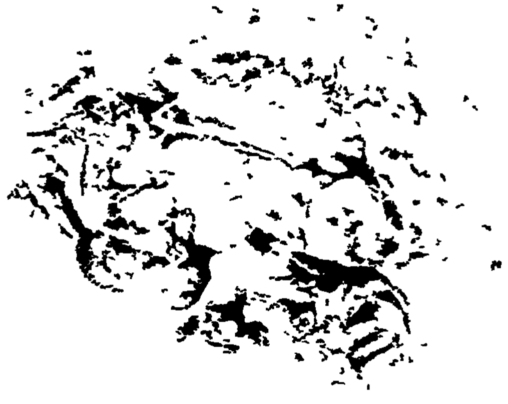
[7] Kennedy, F.: Retrobulbar Neuritis as an Exact Diagnostic Sign of Certain Tumours and Abscesses in the Frontal Lobes, Amer. Jour. Med. Sci., 1911, cxlii., 355–[illegible].

[8] Two other cases with a similar syndrome, operated upon by [illegible] Dandy, have also been reported from an ophthalmological standpoint by Albert B. [illegible]: Eye Signs in Intracranial [illegible] of the Anterior Fossa, Arch. Neurol. and [illegible] (Chicago), 1921, vi. 424–425.

[9] Blackburn, I. W., and Hough, W. H.: Endothelial Spindle-celled Sarcoma of the Dura Mater Penetrating the Brain, New York Med. Journ., 19[illegible], lxxxi., [illegible].

FIG 6.



The right half of the tumour (natural size) removed from its in the right frontal lobe Note (1) the finely nodular face, (2) the rounded prominence in the lower left field, th mould of the hypophysial cup (Cf Fig 5)

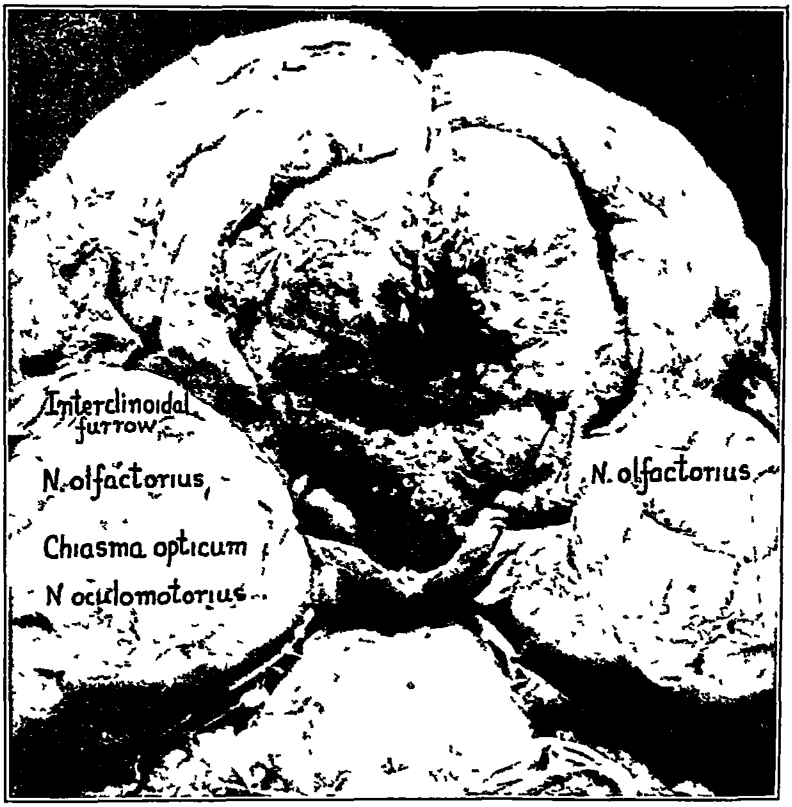
cup-shaped fragments were scooped out of the anterior pole of the tumour until a large cavity was produced This was a tedious procedure, since it was necessary, after the removal of each fragment, to delay until bleeding from the raw surface could be checked All told, an amount of tissue (Fig 15) weighing 78 g was thus removed The patient's blood pressure by this time had begun to fall off and it was deemed wise to postpone the attempt to dislodge the remaining mass of the growth for a third session

A sufficiently generous excavation of the tumour had been made to permit the firm encircling edges of the cavity to be collapsed and sewed together The sutures were left long so that they could be tugged upon in the hope thereby of drawing the growth forward at the subsequent operation should she survive to have one In withdrawing from the incompleted enucleation not only was it impossible because of the contusion and œdema of the frontal lobe to resuture the dura, but it was found that it would even be dangerous to replace the osteoplastic flap without risk of compression. Consequently the cranial portion of the flap had to be sacrificed and the scalp alone was closed over the raw surface protected merely by an intervening layer of gutta-percha tissue At the conclusion of the operation, owing to loss of blood, transfusion was necessary, and it was some hours before she was regarded as out of danger

The convalescence was stormy Owing to tension the wound barely held, and fearing that it might part and a fungus cerebri develop unless the remaining portion of the tumour was soon removed, we were forced into a final-stage operation on the ninth day

Accordingly, on Feb 6th, the flap was again reflected and the tumour exposed By drawing upon the previously-placed sutures the remaining portion of the growth could be held while the nervous tissues were being brushed from its smooth surface, it was finally drawn forward and tilted out of the wound (Fig 16) Some bleeding occurred from the primary point of attachment in the right olfactory groove, but this was promptly checked by the placement of raw muscle obtained from an operation on another patient There was a considerable fall in blood pressure, but on the whole this final stage was better borne than either of the preceding ones After as complete hæmostasis and as careful toilette of the wound as possible, the scalp was replaced and the wound resutured as accurately as the unfavourable circumstances permitted

FIG 7.



The author's second clinically unrecognised case, showing the under surface of the lesion Note the median position of the tumour, cleft anteriorly by the falx, the median dark area corresponding to the olfactory-groove attachment of the growth the transverse groove in the tumour between the ends of the widely separated olfactory nerves made by the inter clinoidal ridge, the overhang of the growth filling the pituitary fossa and crowding the chiasm backward Weight of tumour 82 g

The convalescence was again stormy Where the edges of the flap had become thinned by tension a cerebro spinal fluid fistula developed, and it was six weeks before this had closed Not until April 2nd, nearly three months after her admission, could the patient be safely discharged It had been a long battle and, though symptomatically she was a transformed individual with normal mentality and a marked and most unexpected improvement in vision, she was left with an ugly frontal cicatrix which was ill-concealed by wearing the hair low on the forehead (Figs 17 and 18)

The end-result has been excellent. Practically normal fields with reading vision have been restored to the right eye and ability to count fingers in the previously blind eye At this present writing, five years later, she remains well and is leading, for her years, an active life

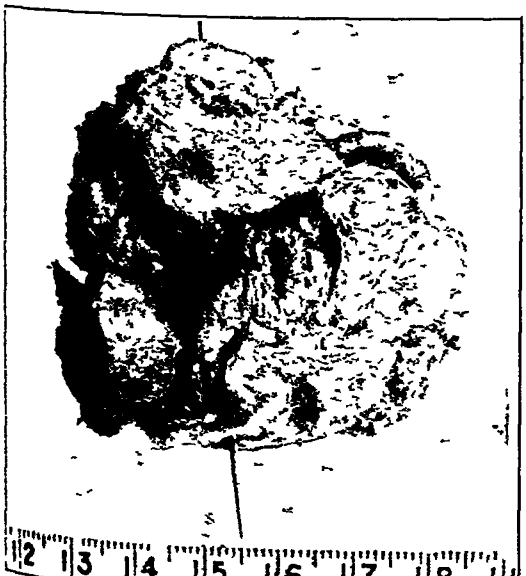
Some idea of the total bulk of the 78 g fragments removed at the first session and of the 126 g portion subsequently removed may be gained from the photograph (Fig 19) of the tissues laid in position on the base of an adult skull

Here, then, was a woman of advancing years with a combination of symptoms which in all probability appeared in the following chronological order (1) a primary left anosmia (unobserved), (2) a homolateral failure of vision due to a primary optic atrophy caused by direct pressure on the left optic nerve, (3) complete anosmia (observed) due to further enlargement of the growth implicating the right olfactory bulb, (4) an increase in intracranial tension from the same cause with consequent papillœdema of the right optic nerve, brain tumours, it being particularly adaptable to the meningiomas

Electrical currents of one form or another under the general term of diathermy have been utilised for therapeutic purposes in both medicine and surgery for nearly 20 years The underlying principle concerns the generation of heat in the tissues when a current is passed through them because of the electrical resistance which they offer I need not go into the history of the subject other than to recall the announcement in 1907 by Prof. Pozzi, of Paris, that certain superficial and even some deep-seated malignant growths might be effectively destroyed by the action of sparks of high frequency and high tension given off from the terminal of Oudin's resonator This original procedure, called fulguration, in which the tissues to be attacked were "sparked" from a distance, has in later years become so far developed and improved upon that local dehydration and coagulation of the living tissues can now be produced by currents brought into direct contact with them.

For these purposes alternating currents of exceedingly high frequency are employed Whereas, the ordinary alternating current supplied by the usual city power plant changes its direction of flow 120 times a second, in the usual electro-surgical apparatus the current oscillates several hundred-thousand times a second Such a rapidly oscillating current has been shown to have no effect on the tissues other than of heating and cutting, the familiar physiological reactions produced by low-frequency alternating currents being absent Since, by the employment of a small ("active") electrode and a large ("indifferent") electrode, all the cutting effects can be confined to the tissues in the immediate vicinity of the active electrode, it constitutes a surgical tool which bids fair to replace the scalpel in certain fields of work.

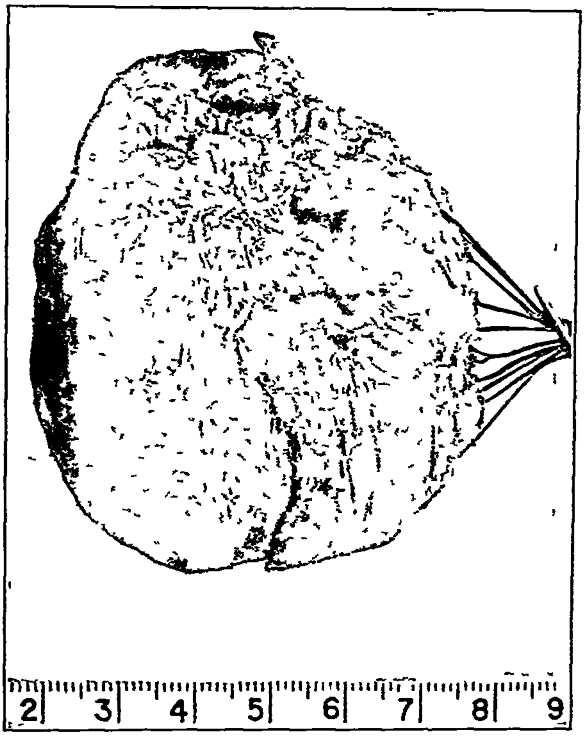
FIG 15



Case 1 Fragments (natural size), weighing 78 g, pieced together after being excavated from the anterior pole of a large unilateral olfactory-groove meningioma

Naturally enough, following Pozzi's lead, this new adjunct to surgery has for obvious reasons been chiefly restricted to the removal of malignant growths and has, therefore, remained largely in the hands of specialists who are called upon to treat malignant disease in inaccessible places Those who have previously employed these methods in the extirpation of carcinoma about the mouth and other body orifices have written enthusiastically on the subject But meanwhile, owing to the variety of trade names which have been introduced, no little confusion has arisen as to the meaning of fulguration, diathermy, endothermy, and so on No less has there been confusion in regard to the various forms of current that are employed, whether unipolar or bipolar, whether for cutting, dehydration, or coagulation For purposes of simplification, therefore, it would seem better for the time being to utilise the single term of electro-surgery for all these varied performances

FIG 16.

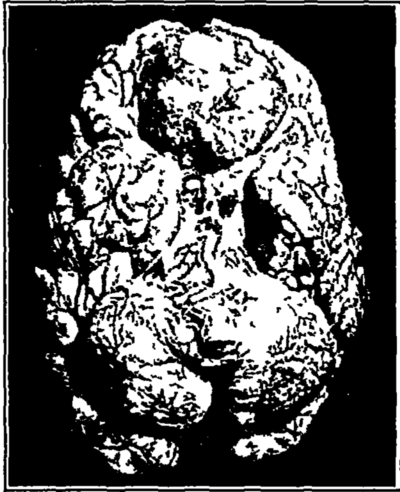


Case 1 Lateral view of posterior portion of tumour removed at second stage operation This is a smooth-surfaced meningioma of the more rapidly growing variety without psammomatous changes

The general surgeon, by long tradition wedded to the scalpel, will doubtless be slow in adopting this novel procedure Only a small part of his work has to do with malignant disease, and I confess to have been somewhat sceptical about the adaptability of this new procedure to my own purposes after having made a few trials with the form of apparatus on the market in which the single tool was a needle to be used either to part the tissues by dehydration, or to char and coagulate them

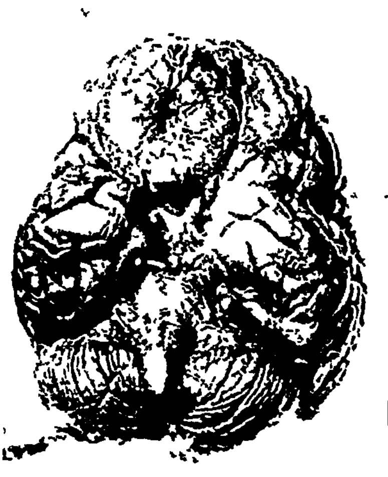
To my colleague, Prof W T Bovie, Director of the Biophysical Laboratories of the Cancer Commission of Harvard University, I am wholly indebted for my renewed interest in the subject, and for what little I know of the physical principles involved Dr Bovie has interested himself in perfecting, for use in the Collis P Huntington Memorial Hospital, an electro-surgical apparatus in which both the coagulating and cutting currents are combined in one machine, and, through the agency of a pistol grip which he has devised, the current can be conveniently let on or off by the operator's finger pressing a trigger In this machine the high frequency of oscillation has been increased from the usual five- or seven-hundred thousand cycles a second used in diathermy, to a million and a half cycles so that the current is not only far more powerful than any which has been so simplified by the technical device to be described, that it can be carried through at one session with preservation of the bone-flap and an invisible scar But the underlying principle remains the same—namely, the partial intracapsular excavation of the tumour in order that its walls may be collapsed and the large growth be brushed away from the brain and removed with minimal contusion of the nervous tissues The removal of the meningioma intact has ordinarily in the past, as already told, been the desired goal of operation To accomplish this, even when the growth is in a situation easily approached, may be a formidable undertaking because of the great vascularity of the adjacent tissues It consequently is loss of blood that makes successive-stage operations more often necessary in the case of the meningiomas than of any other variety of brain tumours

FIG 9



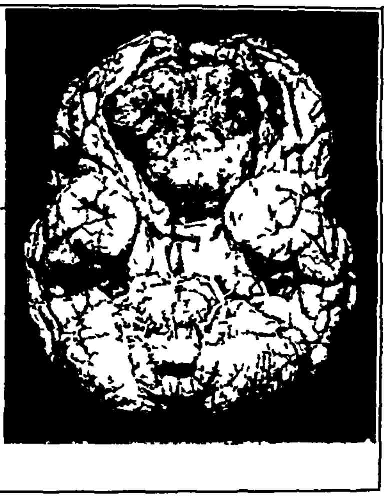
I W Blackburn's first case, Government Hospital for the Insane, Washington D C From *Intercranial Tumours among the Insane*, Washington, 1903

FIG 10



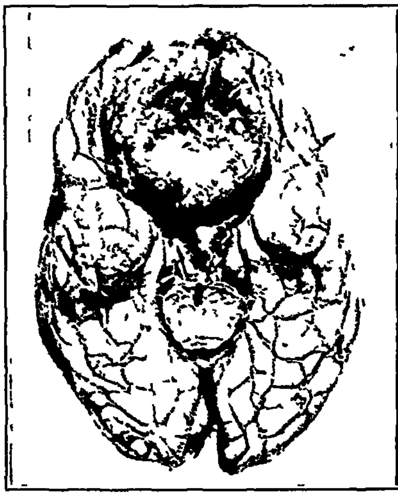
Weber and Papadaki's case *Altérations du Tissu Cérébral dues à la Présence de Tumeurs*, Nouv Icon Salp, 1905, xviii, p 146, pl xxiv The authors called the lesion an angio sarcoma

FIG 11



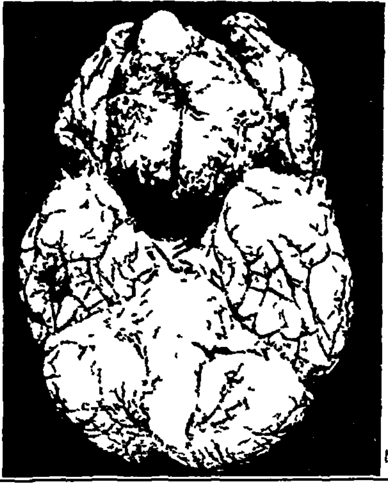
Case reported by Foster Kennedy in durated endothelioma, *Amer Jour Med Sc*, 1911, cxlii, 355

FIG 12



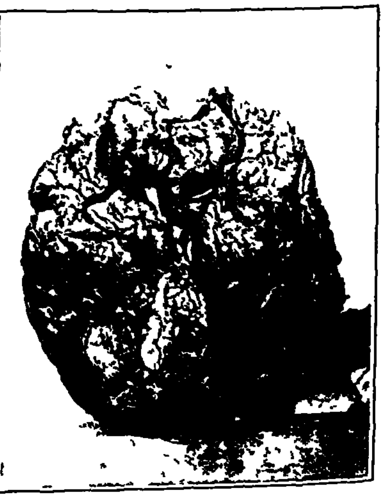
M A Baehr's case Central Indiana Hospital for the Insane Endothelioma Indiana Med Jour, 1920, xxiii, 366

FIG 13



Moses Kerschner's case Montefiore Home, New York Endothelioma Death followed lumbar puncture, Jour Amer Med Assoc, June 17th, 1916, lxvi, 1913

FIG 14



Case reported by C E Royce as sarcoma of the base of the skull, Jour Amer Med Assoc, 1916, lxvi, 1288

The great problem, then, is to control and to diminish the effects of bleeding so far as possible Among the devices towards these ends may be mentioned the use of silver clips, of muscle implantation, of tissue-fixation in situ, and, if necessary, the *coincidental or subsequent employment* either of blood transfusion or of refusion with the patient's own blood which has been collected from the wound by a suction apparatus Latterly, still another principle, that of electrical surgery, has come to be employed not only as a means of perfecting hæmostasis in intracranial operations in general but as a direct aid to the successful extirpation of certain brain tumours, it being particularly adaptable to the meningiomas.

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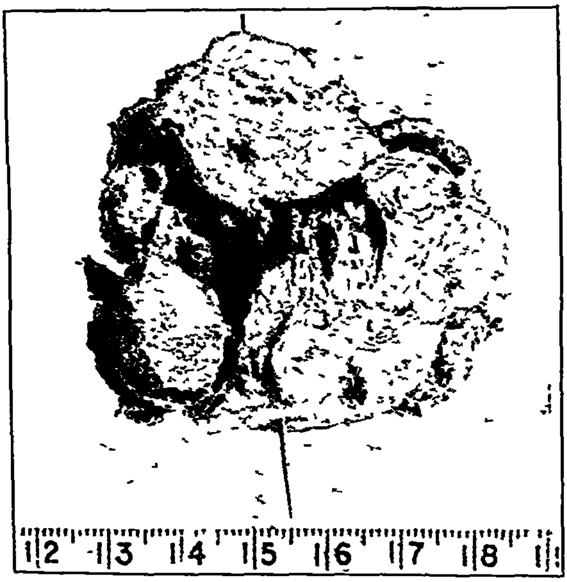

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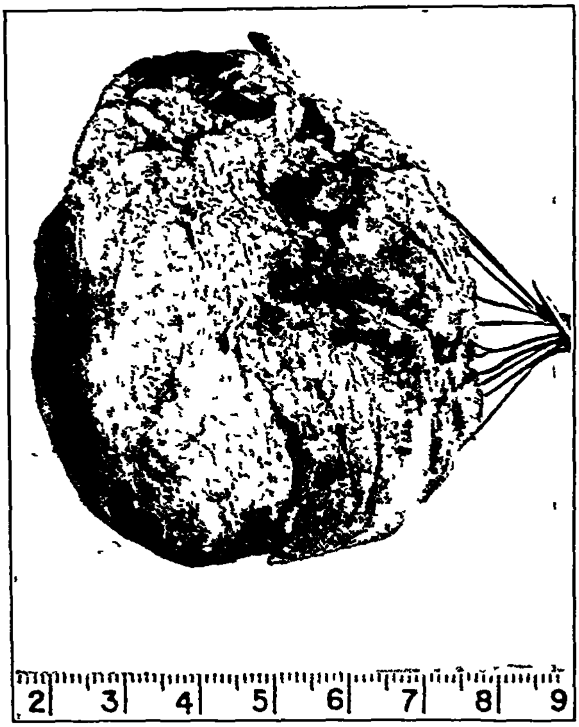
FIG 16



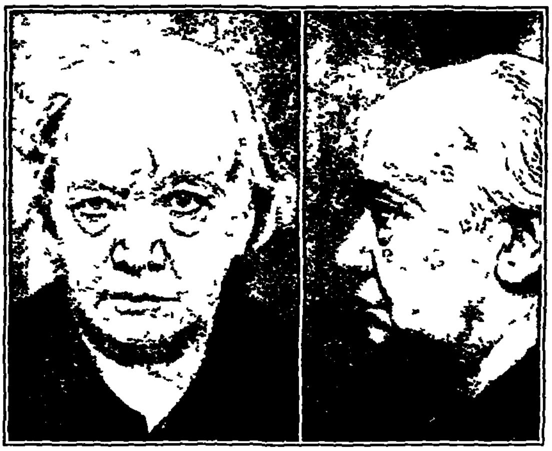
Case 1 Lateral view of posterior portion of tumour removed at second-stage operation. This is a smooth-surfaced meningioma of the more rapidly growing variety without psammomatous changes.

The general surgeon by long tradition wedded to the scalpel, will doubtless be slow in adopting this novel procedure. Only a small part of his work has to do with malignant disease, and I confess to have been somewhat sceptical about the adaptability of this new procedure to my own purposes after having made a few trials with the form of apparatus on the market in which the single tool was a needle to be used either to part the tissues by dehydration, or to char and coagulate them.

To my colleague, Prof W. T Bovie, Director of the Biophysical Laboratories of the Cancer Commission of Harvard University, I am wholly indebted for my renewed interest in the subject, and for what little I know of the physical principles involved. Dr Bovie has interested himself in perfecting, for use in the Collis P Huntington Memorial Hospital, an electro-surgical apparatus in which both the coagulating and cutting currents are combined in one machine, and, through the agency of a pistol grip which he has devised, the current can be conveniently let on or off by the operator's finger pressing a trigger. In this machine the high frequency of oscillation has been increased from the usual five- or seven-hundred thousand cycles a second used in diathermy, to a million and a half cycles so that the current is not only far more powerful than any which has been heretofore used, but by a modification of its character the degree to which the incised tissues are coagulated (dehydrated) may be controlled. The current, moreover, is so powerful that, for purposes of cutting and coagulating, a loop may be employed rather than, or at times in place of, the straight needle in common use

When I first had the good fortune to see this loop being used bloodlessly to scoop out bits of tissue from a malignant tumour for purposes of biopsy, I foresaw that a new tool had been put into our hands to facilitate the piecemeal removal of at least some of the heretofore inaccessible intracranial tumours With Dr. Bovie's cooperation, during the past few months I have gained sufficient familiarity with the instrument to realise that it holds out untold possibilities for the future of neuro-surgery For the purposes of this address it will suffice to report a single experience with one of the hitherto inoperable, bilaterally-placed olfactory-groove meningiomas such as occur in the preceding photographs (cf Figs 9–14) When compared with the account just given of an operation for a far more accessible tumour of like kind which was removed without the aid of electro-surgery, the contrast between the old and new methods will be the more conspicuous

FIGS 17 AND 18.



Case 1 Patient after a third-stage operation showing unsightly scar due to necessary sacrifice of bone flap and prolonged cerebro spinal leakage

Surg No 28023 *A patient with the syndrome of bilateral anosmia, optic atrophy, and altered personality A small area of calcification near the olfactory groove disclosed by stereoscopic roentgenograms*—On Jan 18th, 1927, J T, a man 45 years of age, a printer's assistant, was referred to the Peter Bent Brigham Hospital by Dr William C Muncy, of Providence, R I, with the complaint of loss of vision

Antecedent history—Previously a man of good health, the father of a family of healthy children, the patient had first consulted Dr Muncy on March 23rd, 1926, owing to recent obscuration of vision in his right eye A primary optic atrophy was disclosed with symmetrically contracted field, the left eye being quite normal in all respects Nothing was found to account for the condition The Wassermann reaction was negative, the paranasal sinuses were investigated and showed no signs of disease

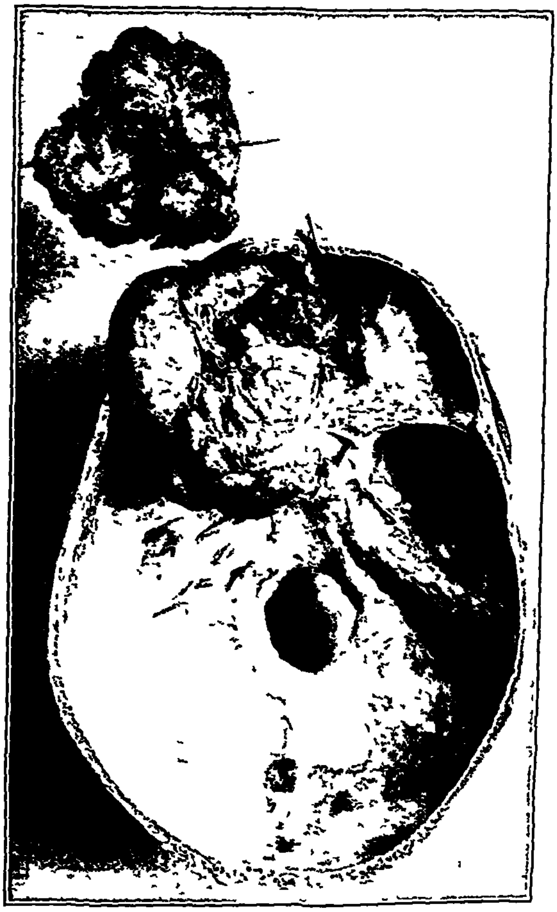
Dr Muncy did not see him again till nine months later, when on Dec 20th, 1926, he reported to say that when leaning over at his work the sight in the left eye had suddenly in like fashion become greatly blurred Owing to poor coöperation and seriously impaired vision a dependable perimetric observation could not be made Sphenoidal trouble was suspected and he was given some intranasal treatments consisting of tamponing with argyrol, &c Since this treatment was ineffective and some absorption of the sella was disclosed by the X ray, a suspicion of pituitary disease was aroused and he was referred, as stated, to the Brigham Hospital

Physical examination on admission—This showed a well-nourished, middle-aged man, whose statements regarding the course of his malady were most unreliable He had an impaired memory for dates and incidents, coupled with a distinct euphoria and indifference to the seriousness of his plight. He was somewhat garrulous and grandiloquent, his manner suggesting an early stage of dementia paralytica. Except for an occasional slight morning headache he disclaimed any physical discomforts whatsoever

Aside from these mental peculiarities the only positive clinical findings were (1) *a complete loss of the sense of smell*, which the patient ascribed to the nasal treatments he had recently received; (2) a *bilateral optic atrophy* with blindness on the right, and vision on the left estimated at 20/200, dependable perimetry being impossible, (3) a possible *right abducens paresis* causing a slight internal squint, (4) the presence of a *minute area of calcification* shown, on stereoscopic roentgenograms, to lie slightly to the left of the midline and about a centimetre above the level of the roof of the orbit. The sella turcica itself was of normal configuration though somewhat atrophic from pressure

Comment—Here, then, was a healthy-appearing individual with obvious mental peculiarities, a complete loss of the sense of smell, an optic atrophy with practical blindness, and a minute patch of calcification just above the left olfactory groove, whereas his primary complaint had been loss of vision on the right. The importance in a case of this kind, of a precise clinical history with the symptoms in their exact chronological order cannot be over-emphasised If we may presume to reconstruct the history in the light of the operative findings, he had had for months or years, unobserved, a relative anosmia primarily affecting the right side This had been followed in course of time by a right-sided primary optic atrophy due to direct pressure on the optic nerve near the

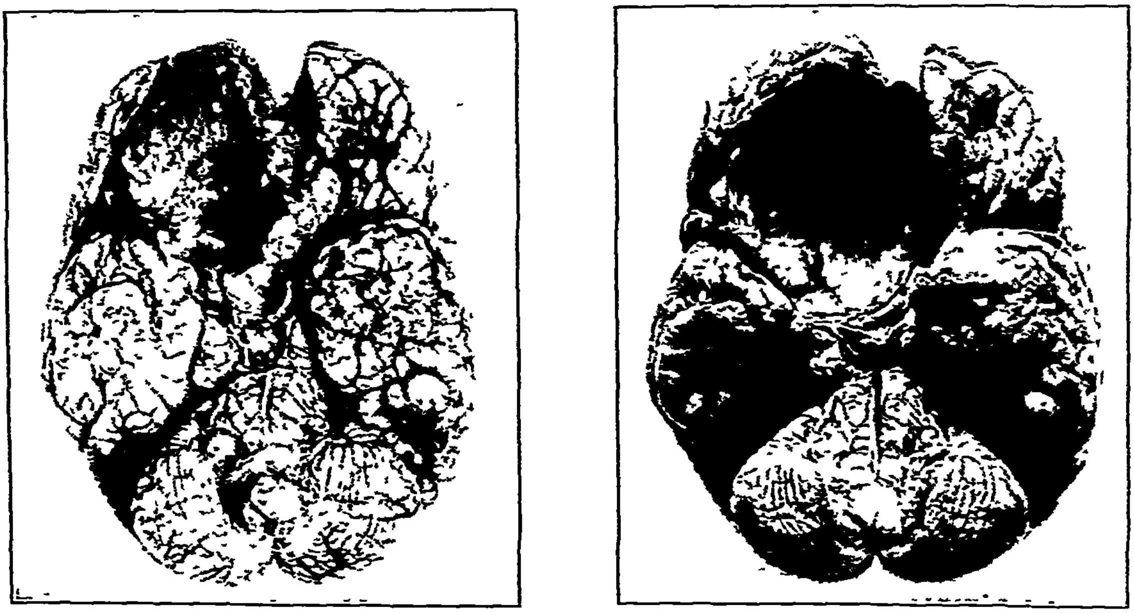
FIG 19



Case 1 The two portions of the tumour removed in successive stages placed upon an adult skull to give some idea of the size and position occupied by the 204 g lesion

foramen. The lesion had finally enlarged sufficiently to produce complete bilateral anosmia to affect the other optic nerve by an increase of intracranial pressure, and to cause indefinite frontal lobe symptoms.

Figs. 20 and 21



Case reported by Blackburn and Hough as an "endothelial spindle-celled sarcoma of dura mater" Tumour was not suspected New York Med. Jour, April 7th, 1906 lxxxiii 692 It is a largely unilateral lesion of the type of Case 1 Fig 20 shows the base of the brain before, and Fig 21 after, removal of the tumour from its bed.

In retrospect the diagnosis is easy enough In reality it was far from being so. It was extremely difficult in the first place to tell whether the optic atrophy was actually primary or, in view of the haziness of the disc outlines, whether it represented a slowly advancing atrophy due to a low grade of papillœdema. What is more, the symptoms had originally appeared on the right side and yet the small shadow detected by the X ray, suggesting calcification in a tumour and presumably, therefore, in its oldest portion or stalk, lay to the left of the median line.

Curiously enough, in accordance with the surgical tradition that unusual cases appear in pairs, there entered the hospital two days after J. T.'s admission another patient, a woman, who ultimately proved to have an exactly similar and symmetrically placed olfactory-groove meningioma. In her case the condition was less advanced and yet it was known that she had unaccountably lost her sense of smell for a period of at least five years. She, too, was found to have a minute patch of calcification which lay just above the olfactory groove on one side of the midline. but in her case there was unmistakably a low grade of papillœdema which had not advanced to atrophy and had not as yet affected vision

The fact that surgical intervention in these two patients was postponed for nearly three weeks after their hospital admission shows how uncertain we were as to the propriety of undertaking a procedure desperate at best, and which if unsuccessful would certainly have made their status much worse than before. It was even difficult to tell from which side the lesion should be approached, for though in the case of J. T the symptoms suggested that the growth was primarily right-sided, yet the patch of calcification lay to the left of the midline.

A tumour of the sort which was visualised in these two patients, however it might be approached, offered by ordinary methods of procedure a surgically hopeless problem. However, on the bare possibility that the anterior pole of the lesion could be brought into view sufficiently well to be attacked with the electric loop, and in the hope that it would prove to be not only a meningioma but one of sufficiently firm consistency for its shell to be finally withdrawn after excavating its central portion, I screwed up my courage to operate upon the first of these patients

Feb 10th, 1927: *Operation Piecemeal total removal, aided by electro-surgical methods, of 60± g more or less symmetrically placed meningioma, though evidently arising from the right olfactory groove. Seven-hour operation. Transfusion. Recovery.*—Under novocaine-anæsthesia the usual low frontal osteoplastic flap was reflected without incident, disclosing a tense dura. On elevating this from the roof of the orbit and carrying the separation down part way to the sphenoidal ridge, the lower anterior margin of a dense tumour could be palpated. What is more, the posterior *part of the orbital roof and the adjacent sphenoidal ridge* were found to be defective owing to the pressure absorption. Because of the discomforts occasioned by elevation of the tense frontal dura to this depth it was necessary to administer ether-anæsthesia.

An incision was finally made through the tense dura, well down under the frontal lobe, and the margin of a meningioma was disclosed. I had but a faint conception at this stage of the procedure of what a task we had before us, but with a dehydrating current I first made a cross-cut in the exposed margin of the tumour and then began to scoop out loopfuls of tissue from the body of the growth.

To make a long story short, it was finally possible to so far excavate the chief mass of the tumour lying to the left of the falx that the outer shell of the growth could be drawn forward and freed from its dense zone of attachment along the deepened and widened olfactory groove of the ethmoidal plate. Only in this area was any troublesome bleeding encountered, and it was easily controlled by using a desiccating current which charred the dura and, at the same time, it is to be hoped, destroyed any remaining nests of tumour cells which remained adherent to it.

On drawing forward the large posterior portion of the growth it peeled away from the cerebral tissues, leaving clearly exposed the elongated and flattened right optic nerve and the adjacent portion of the chiasm as well as the cup-shaped depression in the dura overlying the sella, showing that there were no attachments of the lesion in this situation. The left optic nerve was not seen.

By the removal of this chief mass of the growth from the right side, fortunately with but a minimum of contusion to the frontal lobe, a large cavity was left, which made comparatively easy the subsequent manipulations necessary for the removal of that portion of the tumour lying to the left of the midline This completely blocked the crescentic opening under the falx and hid from view the mesial surface of the left frontal lobe In order to dislodge this remaining portion it was necessary transversely to incise the falx at the upper part of the field and also to detach it from the crista galli which was removed It was then possible to tilt out this last portion of the tumour intact (cf Fig 24), leaving a concave pocket in the hemisphere

After painstaking hæmostasis by the aid of the coagulating current and by the placement of silver clips on a few points which tended to bleed, the huge cavity was filled with Ringer's solution, the bone-flap was replaced, and the scalp was closed in the usual layers without drainage

Second comment —As can be appreciated, this was not a procedure to be done hurriedly, nor could it possibly have been carried through in a single session by any other method I can conceive of Indeed, it could not have been done in multiple sessions as in the case previously described As matters stood, from the time when the scalp was novocainised to the final closure and dressing, seven hours were consumed The patient's condition had remained excellent in spite of the extensive manipulations and some loss of blood, till after the removal of the anæsthetic during the last hour, when the pressures began to fall and the pulse to rise Consequently, while the wound was being closed he was given a transfusion of 500 c cm of blood from a donor, with immediate improvement in his condition

Postoperative notes —The convalescence was without incident He was sitting up on the fourth day The wound healed with a nigh invisible scar (Figs 22 and 23) Almost immediately after the operation he was conscious of better vision in the left eye, and this improved sufficiently so that by the time of his discharge a fairly dependable field could be plotted In spite of a persisting central scotoma he regained sufficient sight to permit him to recognise people and easily to get about alone There also was an almost immediate postoperative improvement in his somewhat obscure mental symptoms

Pathological note —The tumour fragments which were removed weighed, all told, 60 5 g, and taking into account the desiccation produced by the coagulating and dehydrating currents, we may estimate that the growth may have been about an 80-gm meningioma In the accompanying photograph (Fig 24) the chief mass to the left represents the final fragment removed from under the falx out of its cup in the left hemisphere Its surface shows the finely nodular, often mulberry-like character of most of these basilar meningiomas The assembled bits of tissue to the right represent the more or less charred fragments scooped out by the electric loop, some of which are characteristically coiled and worm-like

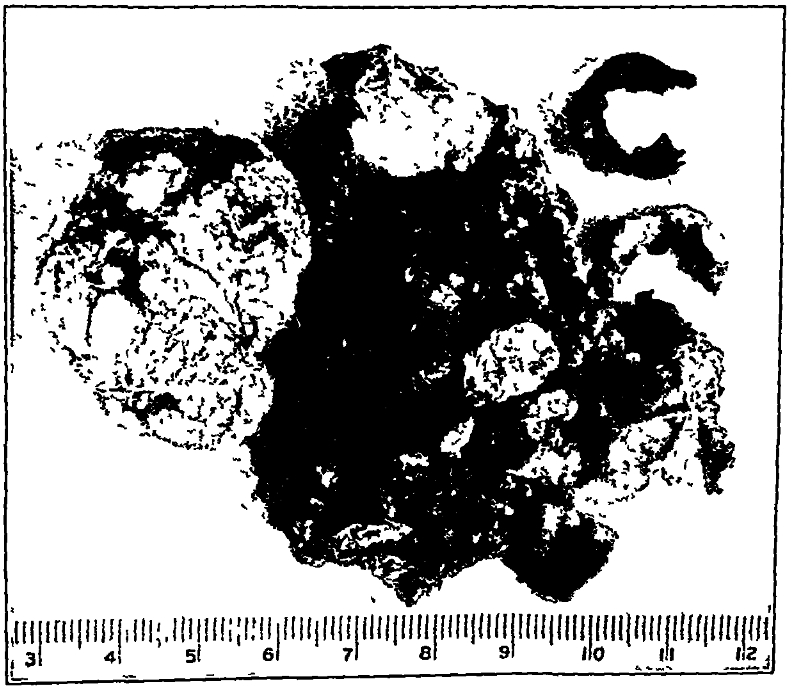
FIGS 22 AND 23

Case 2 The patient three weeks after operation, to show the situation of the nearly invisible frontal scar

To those surgeons who may be accustomed to speed up their operations this may appear to have been an unnecessarily prolonged and formidable procedure All said and done, it is the final result that counts, and having been brought up to believe that convalescence is shortened by attention to the technical details while the patient is on the operating table, I have no dread of a long session However, though an operation so difficult as this will always be time-consuming, experience may serve to shorten it In the other patient I have mentioned as having entered the hospital coincidentally, the procedure was easier and the operation was completed in five hours without the necessity of a transfusion The growth proved to be smaller and the fragments of charred tissue weighed only 35 5 g However, in still a third case, a much larger olfactory-groove meningioma has more recently been successfully attacked by the same methods and fully nine hours were expended, an exhausting business for the surgeon and his staff, no less than for the patient

But the point to be emphasised is that these operations were all carried through at a single session with preservation of the bone-flap instead of in multiple sessions as in the case done by the old methods reported for the purpose of contrast Enough has been said to indicate that by this new method we have at our command a device which makes it possible to extirpate tumours hitherto inaccessible, the attempted removal of which would have been regarded as foolhardy in the extreme

FIG 24



Case 2 To show (on the right) the mound of tissue fragments excavated from the centre of the tumour, together with the main mural mass subsequently dislodged The large intact nodule (on the left) represents the mass which lay to the left of the midline (Natural size) Weight 60 5 g

There is unquestionably much for us to learn about the various currents suitable for dehydration, coagulation, and incision when dealing with intracranial tumours other than the meningiomas. A discussion of the subject in these its broader aspects would lead me from the main purpose of this address, which is to describe that special type of meningioma which arises from the olfactory groove. For these tumours are, to-day, not only capable of clinical recognition owing to their peculiar syndrome, but are capable of removal in a single session by this novel method of electro-surgical excavation.

Surgery, from the days when Peter Lowe here in Glasgow very probably thought the art had reached its highest development, to the time of Macewen, has progressed so rapidly that one generation would hardly recognise in the work done by the next anything more than traces of its own methods. Where do our chief obligations, as surgeons, lie? Without Humphry Davy and the discovery of the principle of inhalation anæsthesia, without Helmholtz and the ophthalmoscope, without Roentgen and the X ray, without Faraday and the alternating current, without Pasteur and his studies of fermentation, without Kelvin and thermo-dynamics, without a host of others and their discoveries, such a procedure as I have described would, in the yesterday of surgery, hardly have been dreamed of, and who can possibly foretell what the morrow may bring forth through the application of discoveries in science which may transform overnight this art of ours in way unanticipated.

The surgeon is not likely to be one to make the underlying contribution, but his practical mind leads him to experiment with it and put it to use, and the result may be revolutionising. Such was the outcome of Lister's labours while connected with your University, and Macewen who succeeded him, found surgery so broadened in scope because of its greater safety, that specialisation has come to signalise our guild. Macewen himself may well be regarded as one of the forerunners of the newest of special fields, that relating to the surgery of the nervous system.

In this field of neuro-surgery a technique utterly different from that which is usually employed by the general surgeon is essential for success, and one promising addition to this technique which is unquestionably capable of enormous development I have ventured to describe at this time. I can realise how delighted my particular teachers Theodor Kocher and W. S. Halsted, men who laid such stress on the importance of painstaking hæmostasis in surgical work, would have been, to have seen some of the new surgery which is as bloodless compared to the surgical methods they perfected, as theirs was bloodless compared to that of their contemporaries and predecessors.

Electro-surgery at least permits us to-day to remove certain brain tumours from situations and under circumstances which a year ago—indeed, six months ago—I would not have thought possible. In illustration of this I have described a single operation upon one patient and have contrasted it with the trials and tribulations of a series of operations conducted only three years ago on another patient for a similar lesion. The electro-physical principles involved are highly technical and are hardly as yet in more than an experimental stage. It will take a combination of physicist and surgeon and electrical technician working together to perfect the apparatus and to develop its future possibilities for surgery in general. Could such a triumvirate, for example, as Kelvin, whose undergraduate publication was on the "Uniform Motion of Heat in Homogeneous Solid Bodies, and its Connexion with the Mathematical Theory of Electricity"—could a Kelvin, I say, in combination with a Macewen and a re-born James Watt as their technical assistant, be resurrected to put their fertile minds and dextrous hands to the problems involved, a second revolution in surgical technique, no less startling and significant than that we owe to Lister, might well enough take place.

A CONTRIBUTION TO THE CLINICAL RECOGNITION OF PITUITARY TUMOURS

BY DR OSKAR HIRSCH,
PRIVAT-DOZENT IN THE UNIVERSITY OF VIENNA

NOT all the syndromes caused by tumours of the hypophysis are mentioned in the publications of investigators—even of those who are thoroughly acquainted with endocrine disorders—and the diagnosis of the pituitary affections is thereby rendered difficult. Most authors discuss only the acromegalic and adiposogenital types of disease due to tumours of the hypophysis, and the ocular type which I described many years ago is not mentioned. For this reason it may be useful to give a description of this type, based on experience of about 100 cases of verified hypophyseal tumours upon which I have operated. I propose also to offer some observations on acromegaly.

The Ocular Type

At the time when I described[1] this type of disease acromegaly and adiposity were the only known characteristics of pituitary tumours. The ocular type is characterised by visual disturbances without any striking constitutional disturbance. This means that the patients show no characteristic change in their appearance; the hands and feet are normal in shape, and except for pallor, which is often observed, the face does not show signs of alteration; nor is there any adiposity. On inquiry, however, the patients will nearly always say that there has been some disorder in the function of the genital glands, such as impotence or amenorrhœa. On careful examination it is generally possible to find signs which accompany tumours of the hypophysis—e. g., loss of the beard or of axillary and pubic hair, disturbance of the sweat-secretion, somnolence, mental indifference, and low body temperature. In women it is often found that milk can be expressed from the breasts.

The most important part of this syndrome is the visual disturbance. As in the other syndromes caused by pituitary tumours, this reveals itself in a diminution of the visual acuity and field. The latter appears most often in the form of bitemporal hemianopsia, and this must be looked upon as almost pathognomonic of hypophyseal tumours. (I say "almost" because I once saw it in a case of hydrocephalus.) The bitemporal hemianopsia corresponds to a certain stage of compression of the chiasma by a tumour of the hypophysis, and at other stages this form of visual defect either may not have been reached or may have been already passed and thus obscured. In lesser degrees of compression of the chiasma the bitemporal hemianopsia may exist for colours only with normal borderlines for white and with normal visual power, whereas high degrees of compression will manifest themselves in the fact that remnants of the temporal field of vision persist on one or both sides, or in amaurosis of one or both eyes.

In the *Zeitschrift für Augenheilkunde* (1921) I described the ocular symptoms in my own cases of pituitary tumours in which the diagnosis had been verified by my operation. This was the first review of its kind, for the papers of Uhthoff and Frankl-Hochwart on ocular symptoms were based on cases dating from a time when the ophthalmoscope was not yet known and examination of the fundus was impossible. In my series it was found that temporal or bitemporal hemianopsia occurred in 84 per cent. of the cases, the remaining ocular symptoms being central scotoma, homonymous hemianopsia, nasal hemianopsia of one eye and some atypical disturbances of the visual field. Primary atrophy of the optic nerves was found as often as the temporal hemianopsia (89 per cent. of cases) and in equally characteristic form Uhthoff estimates the incidence of primary atrophy at 22 per cent , and on this point the difference is seen between my series of cases examined with the ophthalmoscope and a series in which the diagnosis was often made before the instrument was invented

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[1] Arch. f. Laryngol., 1911, No. 3, xxvi. Handb. d. ob. Luftwege, by Katz and Blumenfeld, vol. iii., p. 600.

The ocular signs seen in my other cases (about 11 per cent) were choked disc and optic neuritis So rarely have I found these affections that it seems advisable to be cautious in diagnosing pituitary tumour when choked disc and neuritis are present *In my opinion the presence of these conditions, and* particularly of neuritis, is against the diagnosis of hypophyseal tumour, and I only abandon this attitude of reserve when all the other indications—X ray, genital disturbances, trophic disorders, and appearance of the patient—leave no doubt about the presence of a pituitary tumour The series of errors in diagnosis which I described in 1921 proves how rare it is for choked disc to occur with these growths In this series the diagnosis of pituitary tumour had been made principally because radiography showed enlargement of the *sella turcica*, enlargement of which being still regarded at that time as characteristic of pituitary tumours, and in almost all the cases of error it was noted that there were choked discs These faulty diagnoses belong to the first years of my work in the territory of hypophyseal surgery, when I did not possess experience in the recognition of pituitary tumours, and since I have stuck to the rule mentioned above, about choked disc, I have not had any errors in diagnosis The reason why (with a few exceptions) only primary atrophy of the optic nerves is produced by pituitary tumours is that the tumour leads to constriction of the optic nerves by the arterial circle of Willis, and this barrier prevents the cerebro-spinal fluid from penetrating the sheaths of the optic nerves

However frequent pathological changes may be in the fundus of the eye as a result of pituitary tumours I must emphasise the fact that there are cases of tumour in which the fundus is normal, especially when the disease is not of long duration In such a case the constriction is occurring far back, and a longer time elapses before the visible changes on the papilla conform to the visual disturbances

Two Forms of Acromegaly

Acromegaly was the first pituitary syndrome to be recognised and was described by Pierre Marie in 1886 in the *Revue de Médecine* Since that time acromegaly has been considered a uniform syndrome of disease, but in my opinion it is not I have observed more than 30 cases of acromegaly and should like to divide *them into two groups*—viz (*a*) *benign (or classical)* acromegaly, (*b*) malignant acromegaly From the point of view of morbid anatomy the criterion in these two groups is the benign or malignant tumour of the hypophysis The clinical criterion is visual disturbance, which never occurs in the benign form In the malignant form the ocular troubles appear either simultaneously with the developing acromegaly or after a longer or shorter interval which may cover several years They are nearly always progressive The two forms are found in about an equal number of cases

It is not, however, the presence or absence of visual disturbance that characterises the malignant and benign forms of acromegaly, for this sign merely tells us what kind of tumour we have to deal with Visual disturbances are caused only by a tumour growing *out of the pituitary fossa* beyond the level of the cranial base, and here I must say a word about the anatomical relations of the optic chiasma to the pituitary fossa The chiasma is not situated—as many still suppose—closely in front of the pituitary fossa in the sulcus chiasmatis but is more than one centimetre *above and behind* this sulcus The space between is occupied by the cisterna chiasmatis in such a way that the chiasma itself is suspended in the cerebro-spinal fluid (Zander) As long as the pituitary tumour is growing merely towards the sphenoidal sinus and does not pass the level of the base of skull there will be no visual disturbance If, however, it has a tendency to grow also towards the base of brain it will meet with the optic chiasma, upon which the arterial circle of Willis is superimposed It will then cause visual disturbance by compressing the chiasma against the circulus vascularis (Ludwig, Turck) The progressive growth of the tumour reveals itself also in the progress of the visual disturbances

Benign Acromegaly.

As I have mentioned above, the benign type of *acromegaly, throughout its whole course is never* accompanied by visual disturbance It is caused by a tumour developing mainly within the pituitary fossa and thereby widening it more and more towards the sphenoidal sinus But this tumour has not the tendency to grow upwards towards the base of brain, it remains in a stationary condition Therefore the chiasma is not compressed, and there is no visual disturbance Besides this negative symptom the benign type of acromegaly has also some positive clinical characteristics Not always, but very frequently, *it is associated* with hypertrichosis of high degree In men we see an unusually rich growth of hair over the whole trunk, the limbs, and the buttocks In women there is a rather well-developed moustache and beard, by far surpassing the climacteric form There is much hair on the linea alba, and the growth of hair in these patients is of an almost male type

It is a striking fact that in the benign form of acromegaly genital disturbances do not occur so regularly as in the malignant form and in all the other types of disease of the hypophysis, in the benign form of acromegaly it is fairly common to females with regular or only slightly altered menses, and males with scarcely disturbed or well-preserved potency. One patient of this type married some years after the acromegaly developed, and begot several children

The changes observed in this form of acromegaly pertain especially to those parts of the body which are derived from the ectoderm These parts of the body are affected in other syndromes, too, but never in such a complete and pronounced way as in this type of acromegaly Thus we find, beside the hypertrichosis, an influence on the sebaceous and sweat-glands (numerous comedones, excessive sweating) thickening of skin with corrugation, hypertrophy of the lingual epithelium (besides the enlargement of the tongue itself), striking defects of the dental enamel and disturbances in the growth of nails, and in one case I saw a premature bilateral cataract in a woman of 47 in whose family cataract had never occurred

These patients frequently complain of violent headaches—not during the whole course of the disease, but at least in the first years and during exacerbations Since in cases of large pituitary tumour there may be no headache at all, or it may be only slight, I cannot help believing that the symptom is not the result of space in the cranial cavity being reduced by the tumour—which in benign acromegaly does not extend into the cranial cavity—but is rather a consequence of the endocrine derangement This is the most probable explanation, for the headache promptly disappears after the operation The symptom may be a consequence of swelling of the brain or thickening of the cranium

The acromegalic deformities in both types benign and malignant, are the source of serious mental upset, partly owing to disfigurement and partly because speech is impeded by enlargement of the tongue The benign form of acromegaly ought therefore to be regarded as a serious disease though there are no visual disturbances and only a benign tumour which does not give rise to transformations within the cranial cavity

The pathological lesion of benign acromegaly is a benign adenoma in the anterior lobe of the hypophysis and consists mainly of eosinophil cells From this adenoma emanates a kind of secretion, though it may not be the same secretion as that which comes from the normal anterior lobe of pituitary body, and thus we may have to deal with a hypersecretion in acromegaly But it has not yet been decided whether the normal pituitary secretion is increased, and if so, whether it is transformed as well. Although an adenoma causing benign acromegaly may have become stationary, one or other of the acromegalic features may progress so long as the adenoma continues to produce a secretion, as it may, for several years. That a tumour is stationary is indicated by the absence of visual disturbances, coupled with an increase in some of the acromegalic symptoms. Genuine diabetes mellitus is observed only in a small number of cases; more frequently there is a reduced tolerance for carbohydrates (alimentary glycosuria).

I have operated on only three patients belonging to this group, because until recently I followed the rule laid down by J. Wagner-Jauregg, in whose clinic I operated on my first cases, according to which the indication for operation is above all the existence of progressive visual disturbances. In 1911 I wrote[2] that we would be able to give up this guiding principle when we could diminish the operative mortality of pituitary tumours, and after my experience of recent years I can say that, as a result of the improved technique, death after operation on the hypophysis is very rare. In the three cases of benign acromegaly in which I have operated benign tumours were found, consisting of eosinophil adenoma.

Malignant Acromegaly

I use the term malignant acromegaly because the condition is produced by a tumour which is progressively growing—i.e., a clinically malignant tumour—instead of being caused by the stationary tumour characterising benign acromegaly. I speak of a clinically malignant tumour because even by post-mortem and histological examination its malignancy is sometimes not easily proved. Unrestrained growth is no doubt observed, but it is generally expansive, and only seldom is there infiltration of the neighbouring structures by a tumour-substance. Metastases are very rare, and so far I have not met with any.

The characteristic of the malignant form of acromegaly is the visual disturbance caused by a tumour with progressive growth which not only widens the sella downwards into the sphenoidal sinus but also grows upwards towards the base of brain. The optic chiasma is lying on top of the tumour and is thus pressed against the circle of Willis. In this malignant form we find all the characteristic symptoms of acromegaly as in the benign form—viz., mask-like disfigurement of the face, thickened and projecting nose, thick and everted lower lip, spaced teeth, thickened tongue, paw-like hands, with analogous deformity of feet, kyphosis of the vertebral column, hypertrophic ribs, &c. In malignant acromegaly, unlike the benign form, the type of hair is not changed, and hypertrichosis of face as well as of trunk is rare. There are even cases in which loss of beard and axillary hair has been observed. Genital disorders are found in the malignant form (in contradistinction to the benign) as regularly as in the other syndromes caused by pituitary tumours—dystrophia adiposogenitalis, and the ocular form. The violent headache of the benign acromegaly is usually not observed in the malignant form, though the pituitary tumour is far larger.

The course of development of malignant acromegaly can be explained in the following way. Originally there is an active adenoma which during its initial stage discharges a secretion by which acromegaly is produced; later the adenoma—provided it is primarily of a malignant nature—develops in a malignant way; its quality of forming a secretion is lost, and it takes on the character of those inactive tumours found in dystrophia adiposogenitalis and in the ocular type. On histological examination the tumour is not always found to be eosinophil. We have seen that the syndrome of the malignant acromegaly consists of acromegaly and various symptoms of dystrophia adiposogenitalis or of the ocular form. Therefore we must not wonder at the addition of adiposity to this type of acromegaly. The kind of visual disturbance in malignant acromegaly is the same as that observed in the dystrophia adiposogenitalis and in the ocular type.

I have discussed here only the ocular form of pituitary disorder and the acromegalic. The following types have been recognised in the sequence indicated: 1. Acromegaly (Pierre Marie, 1886). 2. Degeneratio adiposogenitalis (Frohlich, 1901). 3. The Ocular Type (Hirsch, 1911). 4. Pituitary cachexia (Simmonds, 1914). 5. Diabetes insipidus pituitaria (Simmonds, 1914). 6. Nanosomia pituitaria (Erdheim, 1916). 7. Dysostosis pituitaria (Schuller, 1921). The last is caused mainly, but not exclusively, by destruction of the hypophysis, thus resembling Falta's multiple sclerosis of the endocrine glands.

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[2] Arch. f. Laryng., 1911, xxvi.

SUPPURATIVE ARTHRITIS DUE TO HÆMOPHILIC BACTERIA.

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A STUDY of the medical literature shows that suppurative arthritis in which organisms conforming to the *B. influenza* type have been recovered in pure culture is very unusual. It appears that since 1899 only nine cases which fulfil the above conditions have been recorded. In view of the widespread distribution of these organisms this is sufficiently remarkable. A brief record of these cases may be of interest.

Slawyk,[1] 1899: A child of 9 months with an abscess on the dorsum of the hand and arthritis of the ankle; death occurred from general infection and meningitis.

Mya,[2] 1903: A child of 1 year with purulent arthritis of shoulder-joint; meningitis, death.

Dudgeon and Adams,[3] 1907: A baby with suppurative arthritis of left elbow and right hip-joints; meningitis, death.

Fraser,[4] 1911: A child of six months, suppurative arthritis of knee. Joint opened and drained; complete recovery.

Nabarro and Stallman,[5] 1924: Three cases of purulent arthritis of the knee in children aged 1 year, 11 months, and 8 months respectively. In one of these cases the joint infection was preceded by a "cold" and pneumonia; the patient died from meningitis. The other two patients had no preceding or following complications and recovered.

Harris,[6] 1925, analysed a series of 51 cases of acute suppurative arthritis occurring in the six years 1918–1924 in the Hospital for Sick Children, Toronto. Two cases were caused by *B. influenzæ*; both were said to be hæmatogenous infections, in one the primary focus was cellulitis of the orbit. No further details are given beyond the fact that in both cases the joints recovered completely.

Maitland and Cameron,[7] evidently examined the organism from one of these cases. They refer to the strain as one from the knee-joint and blood stream of a child under Dr. Erb, in the Hospital for Sick Children, Toronto.

During the past year the following three cases have come under my notice at St. Thomas's Hospital, and the rarity of the condition seems to justify their publication.

Clinical Records

CASE 1.—M. S., female, aged 7 months. Admitted under Mr. C. M. Page with an acute arthritis of the right hip-joint. No history of preceding illness. Temp., 100°–103° F.; pulse, 100–140. The joint was incised by Mr. C. V. Patrick, resident assistant surgeon, and about 2½ oz. of thick, viscous, yellow pus evacuated. Some caries of the head of the femur and the acetabulum was noted. The temperature and pulse fell to normal within a few days. Healing of the wound was somewhat slow, but complete after six to eight weeks. The destruction of bone produced a tendency to upward dislocation which was eventually overcome by means of plaster splinting and extension. When last seen (four months after operation) the patient's condition was in every way satisfactory.

Films of the pus, when stained by Gram's method and counterstained by dilute carbol-fuchsin, showed a moderate number of minute Gram-negative rods. Cultures on nutrient agar and in beef broth were sterile, on blood-agar a very few minute, non-hæmolytic colonies appeared, but on hæmoglobin agar the growth was profuse (This medium was prepared by adding 4 per cent of whole oxalated human blood to melted agar and heating at 80° C for five minutes) The colonies varied in size from those barely distinguishable with a hand lens up to a small pin's head, but all were discrete, regular, faintly grey in colour, and translucent No other organisms were present Films from the cultures showed marked pleomorphism A fair number of fine rods were still seen, but minute cocco-bacilli predominated and coarser rods and a few filamentous forms were also present After the third subculture the organism died Swabs from the patient's nasopharynx gave an identical organism, not in pure culture Three days after the operation the patient's serum was tested for agglutinating properties Emulsions of the organisms from the pus and nasopharynx were agglutinated in a dilution of 1 in 200 Controls with three normal sera and with saline were completely negative in all dilutions from 1 in 25 upwards

Pathogenicity —Saline emulsions were made from 24-hour subcultures on hæmoglobin-agar and doses estimated by Brown and Kirwan's method [8] A guinea-pig received 200 million bacilli intraperitoneally and two rabbits were given intravenous injections of 200 and 1000 million respectively None of these animals showed any signs of illness The early death of the organism prevented further experiments with fluid cultures or more massive doses

CASE 2 —R L female, aged 18 months Admitted under Sir Cuthbert Wallace She had had whooping-cough and was still coughing The left knee was swollen and very tender Temp , 102°, pulse, 110 The joint was aspirated and 4 c cm of semi-purulent fluid withdrawn Reaspiration was performed three times during the following week, and the patient was severely toxic for a fortnight or more The temperature became normal after three weeks, and recovery was then uneventful Two months later the joint was found to be normal, except for slight periarticular thickening

The bacteriological examinations in this case were carried out by Dr R J V Pulvertaft, pathologist to the units, St Thomas's Hospital, to whom I am indebted for the following information The pus obtained at all four aspirations showed a minute Gram-negative bacillus in pure culture This organism was identical both morphologically and culturally with that found in Case 1, and further resembled it in soon dying out in subculture It could not be found in the throat or nasopharynx, and blood culture was also negative

It was hoped to establish a serological relationship with *B pertussis*, but the death of the organism prevented further tests

CASE 3 —P K , female, aged 8 months Admitted under Mr Percy Sargent with a hot tender swelling of the lower part of the left thigh Temp , 102°, pulse, 152 X ray examination by Mr Geoffrey Fildes showed no bony change The swelling was incised over the inner side of the femur, no pus found Four days later the swelling had extended to the knee, the joint was opened on the inner side, and several ounces of fairly fluid yellow pus evacuated The general condition steadily improved, and the temperature reached and maintained a normal level after 10 or 12 days The operation wound was completely healed after three weeks Extension to prevent contracture was applied by means of a Balkan beam The patient was a congenital syphilitic, and while under treatment for this condition she contracted erysipelas, of which she died At the post-mortem no sign of disease was found in the affected joint Examination of the pus found at operation again showed a minute Gram-negative bacillus corresponding in morphological and cultural characters to the other two strains Further examination of the organism was prevented by an insuperable contamination by *B subtilis*

Discussion.

The 12 cases now recorded show one common feature in that the patients were *all children* Otherwise they fall into two groups (*a*) suppurative arthritis with fatal pyæmia and meningitis, (*b*) suppurative arthritis only In this group not only does the patient recover but the joint also recovers its normal condition and function Indeed, Nabarro and Stallman noted at the post-mortem on their fatal case that the infected joint showed a definite tendency towards repair So far, then, as the joints themselves are concerned the prognosis in these infections is a good one.

In this connexion it is perhaps interesting to note the relationship between the type of case and, when tested, the pathogenicity of the infecting organism to animals. (See table)

The doses employed in the animal experiments were very variable, but with this reservation in mind it is seen that the results of human and animal infection were fairly parallel The exception is Nabarro and Stallman's Case 1, in which the guinea-pig was given approximately the same dose as in their Case 2 No definite conclusions can be drawn from the small number of cases available, but they are shown for what they are worth

Author	Fatal to patient	Fatal to animals
Slawyk	Yes	Yes
Mya	„	„
Fraser	No	No *
Nabarro and Stallman 1	„	Yes
„ „ 2	„	No
„ „ 3	Yes	Yes †
Taylor 1 . ..	No	No ‡

* Fatal to a mouse when grown on staphylococcus agar only
† Guinea-pig died, but the organism was not recovered from it
‡ Comparatively small doses only used

The *question now arises as to what place in the* bacteriological nomenclature is to be given to these organisms The problem of classifying the hæmophilic bacteria has been attacked from several different angles Cohen [9] and Henry [10] found that strains isolated from cases of meningitis were more toxic to animals, and that they tended to kill more frequently by septicæmia than those isolated from the respiratory tract Cohen further stated that animals could be protected against meningeal strains by inoculation with such strains, but that respiratory strains did not so protect On these grounds he considered them to be a different species Henry also called attention to their marked pleomorphism in culture but made no definite separation

Dible [11] separated the hæmophilic bacteria found in the throat into three groups (*a*) hæmolytic; (*b*) non-hæmolytic but with a tendency to production of long leptothricoid threads; (*c*) non-hæmolytic, strictly hæmophilic, give uniform turbidity in fluid media, appear in films as minute bacilli or cocco-bacilli, produce sharply outlined lenticular colonies He considers that only group (*c*) should be called *Bacillus influenzæ* Pfeiffer

Maitland and Cameron [7] examined a very large number of strains as to agglutination and agglutinin absorption They considered that while a few strains showed common properties in these respects, the great majority only reacted with their homologous sera The strain recovered from Erb's case of arthritis differed from other strains no more than they did from each other.

Are any or all of the hæmophilic bacteria found in these cases of suppurative arthritis to be called *B influenzæ* Pfeiffer, are they variants of it, or are they one or more different species? It is interesting to read that the strain recovered from the first recorded case—Slawyk's—was examined by Pfeiffer himself Apparently he had no hesitation in accepting it as the organism which bears his name, but at that time no other hæmophilic bacteria had been described The increased pathogenicity and pleomorphism of some of the strains might lead us to class them with the meningeal strains described by Cohen and Henry Under Dible's classification some might be included in his group (*b*) on account of the formation of filaments in cultures In my Case 2 the occurrence of the arthritis during an attack of whooping-cough suggests that further examination might have shown the organism to have been *B pertussis* *B influenzæ* Pfeiffer is said to live indefinitely if frequently sub-cultured on hæmoglobin agar The strains from my Cases 1 and 2 both died after the third subculture, and Fraser had the same experience with hers

I do not think it is possible to place these organisms at all definitely, but the brief résumé of the evidence available may lead others who meet similar cases to do so It seems advisable in the present state of our knowledge to be content with the non-committal description of "hæmophilic bacteria"

My thanks are due to Sir Cuthbert Wallace, Mr Percy Sargent, and Mr. C M. Page for access to their case-notes, and to Dr. R J. V. Pulvertaft for his bacteriological findings in one of the cases

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THE TREATMENT OF
IMPETIGO CONTAGIOSA BY MEANS OF ULTRA-VIOLET RAYS.

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TREATMENT by ultra-violet rays has recently become so popular that there is practically no pathological condition for which it has not been advised. It must, nevertheless, be confessed that at present evidence of the value of these rays rests more on the assertion of enthusiasts than on the demonstration of scientific investigators

Recently Roxburgh [6] has published the results of treatment of 276 cases of 54 distinct diseases with the mercury-vapour lamp He omits to give certain details of technique—for instance, the distance of the patient from the lamp, and the interval of time between each exposure—and does not allude to control cases

The present investigation has been undertaken in order to test the effect of ultra-violet light on a common superficial skin infection. In such a disease the results of treatment can be easily and accurately estimated and control cases can be easily obtained.

Impetigo contagiosa was selected as being exceedingly common and because it causes loss of very many school hours among London children, and does not always yield so readily to treatment as is commonly supposed, some cases requiring five or six weeks' treatment with the orthodox ammoniated mercury ointment before they can be discharged as fit for school A mixture of flavine and paraffin has been used now for some time at the Queen's Hospital for Children as a routine treatment and has proved very satisfactory, since it prevents the formation of crusts and necessity for their painful removal as with other forms of treatment A record of the results of this treatment is quoted below for comparison

In selecting cases the diagnosis was made on clinical grounds alone Crusting and a tendency to spread were the principal features looked for; some cases of impetiginised eczema are included in the list, the eczema revealing itself on the disappearance of the superficial impetigo. Bacteriological investigations were not made, but Balmain [1] has found in a series of cases—

Streptococci	43 times,	13 times in pure culture
Staphylococci	52 „	21 „ „ „
Diphtheroids	3 „	1 „ „ „

He states that the majority of cases were infected with both staphylococci and streptococci He also notices the superiority of flavine and paraffin to other forms of treatment

Most authors claim that impetigo can be easily cured by the application of ultra-violet rays For instance, W K and E H Russell [4] state that impetigo contagiosa can be cured by means of the air-cooled mercury-vapour lamp if the crusts are previously removed, and if a third degree erythema is produced. It may be mentioned that a third degree erythema is a severe reaction producing general coarse desquamation, and is very painful They further state that the first application prevents the lesions from spreading, and that the disease can be cured by three or four applications

Local treatment is advised at short range "For the bactericidal effect, and to increase the flow of blood and lymph to the part" They add, "we have treated a large number of children with this condition, and have been uniformly successful" Unfortunately, only one case is quoted, in which cure was effected *after four applications in a week.* It is not stated whether any local antiseptic was used in this case

Troup [5] quoted one case as cured after 12 applications Ferguson [2] suggests local treatment at 12 inches with five minutes' exposure, and says that a third degree erythema is desirable. He mentions three cases, but gives no details. Roxburgh [6] has 11 cases of impetigo in his list Of these three were cured or much improved. three were somewhat improved; there was no improvement in two cases and no report on three He remarks: "In impetigo contagiosa the cure seemed to be definitely accelerated in more than half the cases by the employment of ultra-violet light, in addition to ordinary antiseptic treatment" (he omits to define this further), "and in one or two cases to be possible with U V.L alone X rays, as is well known make impetigo worse." The kind of lamp used is not stated.

The type of lamp used appears to have an important bearing on the matter, since the nature of the rays escaping from the water-cooled variety differs from that of those which emerge from the more generally used air-cooled lamp Thus Humphris [3] states. "Near ultra-violet intensity (filtered through mercury vapour as in the air-cooled lamp) has not much germicidal action, but is more penetrative." If this be so it would be expected that the cure of impetigo by means of the air-cooled lamp would be effected rather by building up bodily resistance than by the direct germicidal action of the rays The following observations tend to confirm this view

Technique Employed in the Present Investigation.

One lamp was used for the treatment of all cases This was the Cooper Hewitt direct current air-cooled quartz mercury-vapour arc lamp

Age of Lamp —The lamp had been running for rather more than 1000 hours, and consequently the emitting power had become much less than that of a new lamp

Strength of Lamp —No attempt was made to estimate the emitting power since the units employed are purely empirical and no general standard has as yet been adopted An exposure of five minutes at one foot was sufficient to produce a brisk erythema in the majority of normal children, and in one case a burn was produced by this exposure An exposure of nine minutes at three feet was sufficient to cause definite erythema of the skin of the abdominal wall in most children All the patients treated were children of ages ranging from 6 months to 15 years

Two methods of exposure were used: 1 Local exposure of the affected area alone (e g, face) at a range of one foot 2 General exposure of the whole body at a range of three feet After exposure in both cases a standard lotion was applied to the affected area. This consisted of a mixture of equal parts of lotio calaminæ and lotio nigra This lotion has weak curative properties, and was used alone on most of the control cases. Scabs and crusts were removed before the application of the rays.

Interval between Exposures.—This was in most cases two days, two days, three days. In a few instances daily applications were tried; the results of this method are recorded separately. After receiving treatment the patient's mother was instructed to apply the standard lotion at home, and to do so morning and evening, removing all crusts once a day.

Duration of Exposure.—1. Local cases. First exposure three minutes at one foot, increasing by two and a half minutes at each subsequent exposure. If a brisk erythema was produced the dose was reduced at the next exposure. 2. General cases. First dose 10 minutes (five minutes back and front), increasing two and a half minutes back and front at each subsequent exposure up to 25 minutes total.

Control Cases.—When possible controls were seen at the same time as the cases receiving light, but the standard lotion alone was used. Some cases are included in which the common ammoniated mercury ointment (gr. viii to the ounce) and the flavine and paraffin mixture were used (equal parts emulsified). Considerable difficulty was experienced in obtaining regular attendance of the controls. About 35 cases had to be rejected on this account. It was not possible to observe controls receiving no treatment whatever. The control cases were treated at home by the parents. Every effort was made to see that both sets obtained, so far as possible, identical treatment with the lotion. Those receiving flavine and paraffin, &c., were dressed daily at the hospital.

RECORD OF RESULTS

(A)—*Light Cases*

1. Local cases treated at one foot from lamp.

Total number	20 cases
Number observed to complete cure	15 „
Number improved but not observed to complete cure	4 „
Number not improved	1 case
Average duration for complete cure	13·5 days
Average duration of treatment for those cases improved but not cured	21 „
Maximum *number of exposures in any one case*	11
Minimum „ „ „ „	3
Average number of exposures	5·4
Number of cases in which erythema (third degree) was produced	6
Average time required for cure in these cases was	17½ days
Minimum dose necessary to produce erythema	5 mins.

In nine cases cure was effected without the production of erythema in an average time of ten days.

It would not be safe to conclude that the production of erythema is inadvisable in all cases, however, because those cases in which erythema occurred were on the whole more severe than the rest.

Complications arising during treatment and directly attributable to the effect of ultra-violet rays are:—

Purpura (vide Case 1)	1
Light burn—i.e., severe blistering	1
Vomiting and pyrexia	1
Acute eczema (serous discharge, continuing for some weeks)	1

Intensive local treatment was tried in two cases.

One case, J. C., aged 15, received ten exposures of five minutes each in 13 days. The face only was involved and cure was effected in 13 days after mercurial ointment had been tried for a week.

The other, A. T., aged 5, received 11 exposures in 14 days, at the end of which time his skin appeared to be in an irritable and eczematous condition, more troublesome than the original impetigo. The eczema was certainly caused by exposure at too frequent intervals. This case was a severe and intractable one, the disease having been present for a month before treatment was begun. The exposures never exceeded five minutes, and only slight erythema was produced.

2. Cases receiving general exposure at three feet distance from lamp. Total number of cases, 21.

Number observed to complete cure	19
Improved but not observed to complete cure	2
Unimproved	0

Three cases were suffering from eczema as well as impetigo at the beginning of their treatment. Of these two were cured.

Average duration for complete cure	12¾ days
Average number of exposures	5

Complications present when treatment was begun.

Phlyctenular conjunctivitis, 1 (this complication disappeared after 2 exposures without any local application). Eczema, 3 (two of these cases were cured after 12 exposures in 40 days (see Cases 2 and 3); the third ceased attending after one week). No definite erythema was produced in any of these cases, though in one or two instances the parents stated that they thought the patients' necks and faces seemed redder than usual for a few hours. No complications arose during treatment.

On the whole, *the cases receiving general treatment* were more severe than the local cases, the lesions being more widespread. Some improvement in the general condition of the patients was observed by the parents, the principal feature being improvement in appetite.

(B)—*Controls*

Total number	20 cases
Number cured	16 „
Number improved	4 „
Number receiving standard lotion alone	11
Cured	11
Average time required for cure	14·5 days
Number of cases receiving other treatment (ointment, &c.)	9

(Of these 5 were cured in an average of 20 days; 4 were much improved but ceased attendance after 10 days.)

A large number of cases have been treated with a mixture of flavine and paraffin, and were discharged in an average time of ten days.

Technique

The control cases were seen at the same times as the cases receiving light treatment and were dressed at the same time, receiving treatment at home in the intervals. One or two cases cleared up with extreme rapidity, whereas in others the spread of the disease was not checked. It is not at all easy to strike a fair average in these cases, as it would be fairly easy to select 20 cases which were cured in a week, and a further 20 remaining uncured at the end of a month. As far as possible cases of average severity of the same type as those receiving light were selected (vide Cases 5, 6, and 7).

COMPARISON OF RESULTS

Comparison between General and Local Treatment

The local cases required an average of 13½ days for cure as compared with 12¾ for those receiving general treatment. This result is definitely in favour of general exposure—indeed, more so than the figures indicate, since on the whole the cases receiving this form of treatment were more severe than those receiving local treatment, and should, therefore, have required a longer period for cure.

The fact that no definite erythemas were produced in the general cases seems to contradict the statement made in most of the current works on this subject that a smart reaction is necessary for the cure of impetigo. On the contrary, a third degree erythema has serious disadvantages: (1) it is very painful and often alarming to the patient; (2) a severe burn may easily be produced in sensitive subjects instead of the desired erythema; (3) the skin may be irritated and eczema may be caused; (4) complications are more liable to occur. Local treatment, whether erythema be produced or not, has the further disadvantage that the patient's general health is not likely to be benefited owing to the small area of body surface available for the absorption of the rays. (This is doubted by Eidinow.)

The advantages are: (1) the patient does not have to undress completely; (2) the time of exposures is much shorter.

Comparison between Light-treated Cases and Controls.

Average time required for cure in controls was 14 5 days for those receiving standard lotion, 20 days for those receiving mercurial ointment and 10 for those receiving flavine and paraffin On the whole it appears safe to say that ultra-violet light has some beneficial action though the results cannot be described as striking. The maximum effect was generally observed in cases treated for some time by other methods, in which improvement had apparently come to a standstill The superiority of flavine and paraffin to all other methods of treatment is quite obvious to anyone who is in the habit of treating a large number of cases of impetigo

Conclusion

1 Ultra-violet rays have slight though definite curative effect on cases of impetigo contagiosa
2 General exposure is safer and more efficient than local exposure at short range in this condition
3 The production of a third degree erythema is neither safe nor desirable

I wish to record my indebtedness to Dr Helen Mackay, the medical officer in charge of the Light Treatment Department, Queen's Hospital for Children, for her kind permission to publish these figures and for much invaluable assistance. Also I wish to thank the nursing staff for their unselfish aid in the collection of these results

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Clinical and Laboratory Notes.

A NOTE ON

ULTRA-VIOLET RAYS IN THE TREATMENT OF CHRONIC ULCERATION

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IN view of the many conditions for which ultra-violet irradiation is used with varying success the following notes on three cases of chronic ulceration of the legs due to different causes may be of interest Improvement was obtained in difficult circumstances when other methods had failed

CASE 1 —*Chronic Varicose Ulceration* —The patient is a tall thin woman of 70 years formerly a working housekeeper and now living alone and doing her own work. She was first seen in May, 1924, when she said that for 16 years there had been an ulcer on her left ankle Twice it had healed for a short time as a result of three months' rest but it had only "scabbed over" and had remained painful. Examination showed a typical indolent varicose ulcer, measuring about ½ × ¾ in., below the external malleolus Round it was a boggy discoloured area measuring 4½ × 3½ in. and extending back to the tendo Achillis The veins of the foot and of the leg to the knee were dilated and knotted Apart from thickening of the arterial walls and a raised blood pressure (170/115 mm Hg) there was nothing of note in the general condition of the patient.

The usual methods of treatment were carried out vigorously for seven months firm strapping over dry lint relieved the pain to a great extent and was found to be the most satisfactory but the ulcer showed no signs of healing Calcium lactate was given three times a day in ten-grain doses from July till the end of August without apparent benefit Extract of parathyroid gr 1/20 with 10 gr of calcium lactate daily for a month in December produced no better result.

In January 1925 I asked Mr G Noakes to try irradiation with the tungsten arc lamp Treatment was begun on Jan. 22nd and continued twice a week till April 5th. The whole of the leg from foot to knee was exposed for two minutes on the first day, the time being increased gradually to a maximum of four minutes reached at the sixth exposure The ulcer was dressed with an ointment of zinc and boric acid and Unna s paste bandage was applied from the foot to the knee between the exposures The ulcer had completely healed on March 28th and was covered with rather thin scar tissue The skin round the scar was hard and firm with brown pigmentation There was no pain or tenderness Two more irradiations were given, and a wide elastic bandage applied During the treatment and afterwards the patient did her own housework shopping, &c., and from time to time helped to nurse a sick friend

The ulcer has now remained healed for two years In June 1926 the patient complained of a little pain and tenderness and there was slight œdema about the scar. After a few exposures to the ultra-violet rays the pain and swelling disappeared

CASE 2 *Diabetic Ulceration* —A woman of 48, a book-keeper in a shop attended the out-patient department at the New Sussex Hospital from Nov. 6th 1925, till Jan 22nd, 1926 while on a visit to Brighton She was a diabetic of the stout type (weight 14 st. 5 lb) and had been on insulin since the previous August She had a round ulcer about the size of a shilling on the sole of her foot. This had formed before any insulin was given and had not improved Acetone bodies were present in the urine when the patient was first seen so for a month she was kept under observation while the diet and insulin were regulated The ulcer was covered with a simple dressing

In December Mr. Noakes began treatment with the tungsten arc lamp The patient left Brighton after 12 exposures, and the ulcer was then filled with granulation tissue. Dr Olive Potter tells me that the treatment was continued and that the ulcer healed in a few weeks and has not recurred This patient had also varicose ulceration of the leg and there was fairly frequent glycosuria while she was under treatment.

CASE 3 *Erythema Induratum of Bazin* —A girl of 23 first attended the out-patient department in August, 1925 She stated that she had had painful swellings and ulcers on her legs since the age of 16, always worse in the summer. When first seen there were scars of healed ulcers on both legs, but there had been no fresh ulceration for two years. The Wassermann reaction was negative In October 1926 there was much general swelling of both legs which were cold and cyanosed There were many subcutaneous nodules, several being inflamed, and ulceration occurred on both legs After ten applications of ultra-violet rays, again by Mr. Noakes, the ulcers had healed the nodules disappeared, and the legs were slimmer, the patient said, than they had been for years In December there was a recurrence of ulceration in two places and again irradiation brought about rapid healing

The following points may be noted · (1) In the first case the long duration of the ulcer and the resistance to other treatment (2) In the second case the position of the ulcer on the sole of the foot, which was not kept at rest, made healing difficult Moreover, the patient was by no means sugar-free during or before treatment (3) In the third case the severe and distressing condition of the legs in a young woman and the remarkable improvement obtained.

SPLENECTOMY AND ITS COMPLICATIONS IN EGYPTIAN SPLENOMEGALY.

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THE hospital to which I am attached is situated ten miles north of Cairo It has an attendance of some 22 000 patients yearly at the annexe for bilharzia and ankylostome infections These patients come from Lower Egypt Most of our splenomegaly cases came from the Eastern Delta a few from the Central Delta, and none from Upper Egypt This distribution of cases may be due to proximity of hospital to the first two areas but it is significant that Coleman, of Old Cairo reports a high incidence of splenomegaly in the Eastern Delta

Splenomegaly may occur at almost any age, it is commonest between 15 and 30 years Our youngest of the control cases Scabs and crusts were removed before the application of the rays

Interval between Exposures—This was in most cases two days, two days, three days In a few instances daily applications were tried , the results of this method are recorded separately *After receiving treatment the patient's mother* was instructed to apply the standard lotion at home, and to do so morning and evening, removing all crusts once a day

Duration of Exposure—1 Local cases First exposure three minutes at one foot, increasing by two and a half minutes at each subsequent exposure If a brisk erythema was produced the dose was reduced at the next exposure 2 General cases First dose 10 minutes (five minutes back and front), increasing two and a half minutes back and front at each subsequent exposure up to 25 minutes total

Control Cases—When possible controls were seen at the same time as the cases receiving light, but the standard lotion alone was used Some cases are included in which the common ammoniated mercury ointment (gr viii to the ounce) and the flavine and paraffin mixture were used (equal parts emulsified) Considerable difficulty was experienced in obtaining regular attendance of the controls About 35 cases had to be rejected on this account It was not possible to observe controls receiving no treatment whatever The control cases were treated at home by the parents Every effort was made to see that both sets obtained, *so far as possible, identical treatment* with the lotion Those receiving flavine and paraffin, &c , were dressed daily at the hospital

RECORD OF RESULTS

(A)—*Light Cases*

1 Local cases treated at one foot from lamp

Total number	20 cases
Number observed to complete cure	15 ,,
Number improved but not observed to complete cure	4 ,,
Number not improved	1 case
Average duration for complete cure	13 5 days
Average duration of treatment for those cases improved but not cured	21 ,,
Maximum number of exposures in any one case	11
Minimum , ,, ,, ,,	3
Average number of exposures	*5 4*
Number of cases in which erythema (third degree) was produced	6
Average time required for cure in these cases was	17½ days
Minimum dose necessary to produce erythema	5 mins

In nine cases cure was effected without the production of erythema in an average time of ten days

It would not be safe to conclude that the production of erythema is inadvisable in all cases, however, because those cases in which erythema occurred were on the whole more severe than the rest

Complications arising during treatment and directly attributable to the effect of ultra-violet rays are —

Purpura (vide Case 1)	1
Light burn—i e , severe blistering	1
Vomiting and pyrexia	1
Acute eczema (serous discharge, continuing for some weeks)	1

Intensive local treatment was tried in two cases

One case, J C , aged 15, received ten exposures of five minutes each in 13 days The face only was involved and cure was effected in 13 days after mercurial ointment had been tried for a week

The other, A T , aged 5, received 11 exposures in 14 days, at the end of which time his skin *appeared to be in* an irritable and eczematous condition, more troublesome than the original impetigo The eczema was certainly caused by exposure at too frequent intervals This case was a severe and intractable one, the disease having been present for a month before treatment was begun The exposures never exceeded five minutes, and only slight erythema was produced

2 Cases receiving general exposure at three feet distance from lamp Total number of cases, 21

Number observed to complete cure	19
Improved but not observed to complete cure	2
Unimproved	0

Three cases were suffering from eczema as well as impetigo at the beginning of their treatment Of these two were cured

Average duration for complete cure	12¾ days
Average number of exposures	*5*

Complications present when treatment was begun.

Phlyctenular conjunctivitis, 1 (this complication disappeared after 2 exposures without any local application) Eczema, 3 (two of these cases were cured after 12 exposures in 40 days (see Cases 2 and 3) , the third ceased attending after one week) No definite erythema was produced in any of these cases, though in one or two instances the parents stated that they thought the patients' necks and faces seemed redder than usual for a few hours No complications arose during treatment

On the whole, the cases receiving general treatment were more severe than the local cases, the lesions being more widespread Some improvement in the general condition of the patients was observed by the parents, the principal feature being improvement in appetite.

(B)—*Controls*

Total number	20 cases
Number cured	16 ,,
Number improved	4 ,,
Number receiving standard lotion alone	11
Cured	11
Average time required for cure	14 5 days
Number of cases receiving other treatment (ointment, &c)	9

(Of these 5 were cured in an average of 20 days , 4 were much improved but ceased attendance after 10 days)

A large number of cases have been treated with a mixture of flavine and paraffin, and were discharged in an average time of ten days

Technique

The control cases were seen at the same times as the cases receiving light treatment and were dressed at the same time, receiving treatment at home in the intervals One or two cases cleared up with extreme rapidity, whereas in others the spread of the disease was not checked It is not at all easy to strike a fair average in these cases, as it would be fairly easy *to select* 20 *cases* which were *cured* in *a* week, and a further 20 remaining uncured at the end of a month As far as possible cases of average severity of the same type as those receiving light were selected (vide Cases 5, 6, and 7)

COMPARISON OF RESULTS

Comparison between General and Local Treatment

The local cases required an average of 13½ days for cure as compared with 12¾ for those receiving general treatment This result is definitely in favour of general exposure—indeed, more so than the figures indicate, since on the whole the cases receiving this form of treatment were more severe than those receiving local treatment, and should, therefore have required a longer period for cure

The fact that no definite erythemas were produced in *the general cases seems to contradict* the statement made in most of the current works on this subject that a smart reaction is necessary for the cure of impetigo On the contrary, a third degree erythema has serious disadvantages (1) it is very painful and often alarming to the patient , (2) a severe burn *may easily be produced* in sensitive subjects instead of the desired erythema , (3) the skin may be irritated and eczema may be caused , (4) complications are more liable to occur Local treatment, whether erythema be produced or not, has the further disadvantage that the patient's general health is not likely to be benefited owing to the small area of body surface available for the absorption of the rays (This is doubted by Eidinow)

The advantages are (1) the patient does not have to undress completely , (2) the time of exposures is much shorter.

etherised and the control flies Two types of flies were used, the ordinary wild type of drosophila, and the smaller vestigial type with rudimentary wings that was discovered in Morgan's laboratory.

Prof. Pearl laid stress on the great difficulty of biological experiments, as they involved psychology and behaviourism as well as physiology, long study was needed from many points of view before an experiment could be properly set up Much of the apparently greater variability of biological phenomena as compared to those of physics and chemistry was due to general sloppiness in experimental method To describe his results, he showed age survivorship tables starting from the emergence of the *imago, and excluding the larval and pupal stages* These tables were smoothed by the formula log $l_x = e^x(a+bx+cx^2+dx^3)$, but in actual fact the coefficients *of the two last terms* were almost negligible The chief points of interest were (1) the general resemblance of form to that part of the human survivorship curve from 12 years of age onward, (2) that the same relation between the sexes held as in human life, the female having in each case a greater hold on life, (3) that the curve for the vestigial type differed in form from that of the wild type, the vestigial curve approximating to that of a constant death-rate in middle life, and (4) that the expectation of life was of the same order in days as that of man in years

In order to superimpose the human and fly survivorship curves in comparable time units, the question arose what point in human life corresponded to the point of emergence of the fly? The two most logical points to make *coincident appeared to* be those at which only one survivor would be left out of one thousand births, and at the other end of the scale the points at which the instantaneous death-rate q_x was a minimum—i e, one day of age for drosophila and 12 years of age for man (using the U S A life tables) When centiles of equivalent life span were taken as time units for age, the survivorship curves of man and the wild type of fruit fly followed each other well, but that of the vestigial type of fly fell considerably below The main points of interest from this comparison were (1) That the distribution of mortality in different parts of the life span, taking biological age as the base, was essentially the same in the wild fruit fly as in man, this quantitative resemblance did not, of course, imply a qualitative resemblance of cause, but did suggest some underlying factor of importance of which age was one expression (2) That the genetic change from the wild type to the vestigial type involved a profound change in the distribution of mortality. There were two limiting types of survivorship curve, the one approaching the rectangular form corresponding to a very light mortality throughout the greater part of life and a very high death-rate at the latter end, which in its most extreme form would correspond to a single day of judgment for all The wild fruit fly tended towards this type The other was a diagonal survivorship curve corresponding to a constant force of mortality at all ages The vestigial type was nearer to this form. Between these theoretical extremes most life curves lay A third extreme form —also rectangular—was theoretically possible, and would result from a very heavy selective early mortality followed by a fairly constant light rate, but it was difficult to see how this could occur These observations raised the question of the biological explanation of the remarkable difference in the life duration distribution between the wild and vestigial type of drosophila.

The Second Lecture

On June 9th Prof Pearl described further experiments on drosophila designed to elucidate the factors influencing the marked differences in mortality already referred to Food was the first environmental factor studied, the excess mortality on the banana medium over that on the synthetic medium had already been noted, but it was found that unless food variations were grossly outside the normal no startling differences in mortality occurred Density of population in the bottle, however, had early proved itself to be an environmental factor of weight, and series of experiments had followed up this point The first series involved 15,000 normal wild flies, the food used was the banana medium, and the flies were kept at 25° C in 530 1 oz phials at 20 different densities varying from 2 to 200 flies per bottle All bottles were of the same size with the same amount of food (5 c cm) in each *It* was found that an initial density of 35 flies per bottle was the optimum, higher and lower densities both gave higher mortality The age-specific death-rate curves, when plotted against different initial densities, tended to become flatter as age increased The mean duration of life rose steeply as the initial density rose from 2 to 15, then more slowly, remaining almost horizontal, till a density of about 55 was reached, after which the mean duration of life declined steadily till the initial density was about 200 For higher densities the decline in mean duration was very gradual The main results were. (1) That the rate of mortality was profoundly influenced by the density of the population when the latter was confined in a limited space, the volume and surface of the food-supply being constant for all densities, (2) that the optimal initial density was about 35 to 55 flies per 1 oz bottle, and (3) that the deleterious effect of higher or lower densities was most pronounced in the first few days of imaginal life Prof. Pearl said that these results had been many times confirmed, and that the same characteristics appeared with the new synthetic food medium as with the banana medium

The effect of sudden large changes in population density was then tried Bottles at initial densities of 35 and 200 flies were started, some of these were used as controls; in others the population, which had started at an initial density of 200, was on the sixteenth day again made up to 200 by adding 16 day old survivors from bottles of initial density (*a*) of 35, and (*b*) of 200 The newcomers were distinguished from the old inhabitants by slight wing-tip clipping The results showed that while the mean duration of life of flies in a control bottle with initial density 35 was about double that of flies in a control bottle with initial density 200, those flies which had spent the first 15 days of their life in the bottle of initial density 35 had their further expected duration of life decreased by transfer to a density of 200, and that those which had spent their first 15 days in a bottle of initial density 200 and were transferred to a density of 200 again on their sixteenth day showed a still higher subsequent mortality, higher also than the controls in a bottle of initial density 200 left to die out without further additions Hence crowding in early life had deleteriously affected the survivors, and also crowding as late as the sixteenth day increased the subsequent mortality An unexpected feature was that a minimal density was not an optimum Density could not, however, explain the differences between the wild and vestigial types

Further experiments on the *inheritance* of duration of life had proved (1) that genetic differences affected the duration of life, (2) that those differences were capable of isolation by selection and inbreeding, and (3) that they remained constant over a period covering 10 to 25 generations The experiments were as follows Pairs of virgin brothers and sisters had been mated and their progeny allowed to mate at random each within its own line only The different lines showed marked differences in mean duration of life The inbreeding *within the same line* had been continued for seven months and the mortality retested in the progeny of another brother and sister in each line The different lines stood in the same order *as before* as regards duration of life The interval had covered the biologically long period of 18 generations and there had been only *one* initial selection

Prof Pearl stated that these experiments had been many times repeated, *hence it was confirmed* that patient was 7 and oldest 35 Cirrhosis and ascites develop early and prevent a ripe age being reached. In 1925 we performed splenectomy in 21 cases of splenomegaly Three were females Eighteen, including the females, harboured *Bilharzia hæmatobium*, in ten the stools revealed *B mansoni* also, and in 15 ankylostome infection In three cases only was no helminth infection demonstrated

We hold the opinion that there is some relation between bilharziasis and splenomegaly, for the following reasons (1) Higher incidence of bilharziasis and splenomegaly in males than in females (2) Demonstration of bilharzia in almost every case of splenomegaly (3) Portal bilharzial cirrhosis is reported from every case of splenomegaly where liver has been examined after death (4) Calcified bilharzia ova are found in nearly all the spleens removed and treated with 5 per cent NaOH (5) *B mansoni* and splenomegaly are found far more often in Lower than in Upper Egypt (6) In *Schistosoma japonicum* infections a picture very like to that found in Egypt is reported—viz , enlarged spleen, cirrhosed liver ascites

Operation

An injection of pneumococcal vaccine (50 million) was given five days before, and an injection of morphia and atropine half an hour before, operation Chloroform was used, for the hospital attendant who acted as anæsthetist could give nothing else High stovaine was tried twice, but not again, because both patients fainted when spleen was drawn out of abdomen In each case the incision was a median, and a transverse right through abdominal muscles to the ribs, affording full view of spleen and its bed Adhesions could thereby be separated under direct observation and the pedicle easily got at The freed spleen was brought out of the abdomen, turned over to the patient's right, thus exposing posterior surface of pedicle, and by gentle gauze dissection the tail of the pancreas was separated and splenic vessels isolated and ligatured in two places Omentum, usually adherent to pedicle, was separated Both sides of broad pedicle were clamped as close to spleen as possible, and the spleen removed It was found that dealing in this way with pedicle (from back, not from front) made it an easy operation, sometimes completed in 20 minutes In two cases good results followed reinjection into patient of the splenic blood (1 to 2 kg) previously treated with 5 per cent sod cit solution This was not more often done because the patients were as a rule in good condition on leaving the operation table It is an easy and ready method of treating cases suffering from shock, or much loss of blood, from this operation The spleens removed weighed from 0 8 to 2 5 kg

Blood counts before operation gave averages of 3 to 4 million red, 3 to 6 thousand white, cells with large and small lymphocytes and eosinophiles slightly increased One girl before operation showed a leucopenia of 1500 white cells —she made a good recovery Although ascites rather forbids operation, two cases, after one tapping and the fluid very slow in returning, made good after-operation recoveries

Complications after Operation.

There were two cases of pneumonia with recovery Two cases of right hemiplegia occurring on the seventh and eighth day respectively recovered with slight spasticity of leg

Deaths Two patients died suddenly on seventh and tenth day respectively from pulmonary embolism One case of double broncho-pneumonia was fatal on thirty-second day One patient on the ninth day developed tenderness in the right hypochondrium, vomiting, diarrhœa, melæna, and ascites Death occurred seven days later, and examination revealed embolism of a small branch of the superior mesenteric vein with œdema, congestion, and chocolate-like colour of two feet of small intestine, and local peritonitis Thus embolism, cerebral, pulmonary, abdominal, occurred in five cases It is perhaps the cause of the pneumonia that may set in with dramatic suddenness soon after operation

Most of the 17 survivors were seen from four to eight months later They were then in good health and at work Without operation all would have died within two or three years High as is the mortality after the operation, yet splenectomy to-day holds out the only hope in these cases of avoiding an early death

EXPERIMENTAL VITAL STATISTICS.

PROF RAYMOND PEARL'S LECTURES.

THREE lectures on experimental vital statistics were recently given at University College by Prof Raymond Pearl, Director of the Institute for Biological Research at the Johns Hopkins University, Baltimore The chairman at the first lecture was Sir George Buchanan, senior medical officer of the Ministry of Health, who referred to the wide range of subjects with which public health workers in practical applied epidemiology now came into touch From the original starting-point of medicine the field in earlier years was mainly confined to engineering and analytical chemistry, but now entomology, biochemistry, zoology, and many other subjects were involved, and behind all these lay the art or science of the statistician Prof Pearl had the medical knowledge and the practical training necessary to interpret his work as an epidemiologist and as a statistician

Prof Pearl expressed his pleasure at being again at University College, to which he had come 22 years ago as a student under Prof Karl Pearson, from whom he had received inspiration for his work

The First Lecture

His subject to-day, he said, was not epidemiology but an attempt to develop part of the field of biology not hitherto much discussed The work of the vital statistician covered important problems of biology It was impossible to discuss organic evolution without studying birth- and death-rates His thesis was that biostatistics was not simply the handmaiden to preventive medicine, but a symbol of the *biology of groups* The whole was different from and greater than its parts " Holism " and emergent evolution were brought to the fore by the work of Lloyd Morgan, Smuts, Henderson, Jennings, and others who recognised that the group had attributes peculiar to itself which needed measurement as much as those of the individual Statistical technique was the only means available for discussing the attributes of groups, the usual methods of description in biology were fundamentally incapable of giving a description of the group except in terms of the individual

As in the general methodology of science experiment had its part, so also it had its part in group biology The experimental biostatistics to be described had been carried out in his laboratory at the Johns Hopkins University over a period of eight years In choice of animals for such work it was essential (1) that they should be short lived, (2) that they should breed freely in captivity, (3) that their husbandry in the laboratory should be simple Mice had been used at first, but at the end of the first year a calamity had destroyed the whole colony in a single half hour Since 1919 the fruit fly *Drosophila melanogaster* had been exclusively used, and had proved completely satisfactory for a study of the forces of mortality and natality

After a brief summary of the somewhat scanty previous work done on this subject on other animals than man, Prof Pearl described the life-history of the fruit fly and the technique used in his experiments The life-cycle was short, 9–11 days covering the period from egg to egg The flies were bred in glass bottles with a food substratum at the bottom A synthetic food of salts and sugar, solidified with agar and with yeast growing on the surface, had been found more satisfactory and less variable than the cooked banana pulp used at first It was sterile by virtue of its high acidity, and experiment had proved that not only did the synthetic food increase the birth-rate, but that the mortality was three times greater on the banana medium than on the synthetic medium Immediately after emergence from the pupal stage the flies were lightly etherised for the purpose of sex determination Tests showed no marked difference between the duration of life of the etherised and the control flies Two types of flies were used, the ordinary wild type of drosophila, and the smaller vestigial type with rudimentary wings that was discovered in Morgan's laboratory.

Prof Pearl laid stress on the great difficulty of biological experiments, as they involved psychology and behaviourism as well as physiology, long study was needed from many points of view before an experiment could be properly set up Much of the apparently greater variability of biological phenomena as compared to those of physics and chemistry was due to general sloppiness in experimental method To describe his results, he showed age survivorship tables starting from the emergence of the imago, and excluding the larval and pupal stages These tables were smoothed by the formula log $l_x=e^x(a+bx+cx^2+dx^3)$, but in actual fact the coefficients of the two last terms were almost negligible The chief points of interest were · (1) the general resemblance of form to that part of the human survivorship curve from 12 years of age onward, (2) that the same relation between the sexes held as in human life, the female having in each case a greater hold on life, (3) that the curve for the vestigial type differed in form from that of the wild type, the vestigial curve approximating to that of a constant death-rate in middle life; and (4) that the expectation of life was of the same order in days as that of man in years

In order to superimpose the human and fly survivorship curves in comparable time units, the question arose what point in human life corresponded to the point of emergence of the fly? The two most logical points to make coincident appeared to be those at which only one survivor would be left out of one thousand births, and at the other end of the scale the points at which the instantaneous death-rate q_x was a minimum—i e, one day of age for drosophila and 12 years of age for man (using the U S A life tables) When centiles of equivalent life span were taken as time units for age, the survivorship curves of man and the wild type of fruit fly followed each other well, but that of the vestigial type of fly fell considerably below The main points of interest from this comparison were (1) That the distribution of mortality in different parts of the life span, taking biological age as the base, was essentially the same in the wild fruit fly as in man, this quantitative resemblance did not, of course, imply a qualitative resemblance of cause, but did suggest some underlying factor of importance of which age was one expression (2) That the genetic change from the wild type to the vestigial type involved a profound change in the distribution of mortality. There were two limiting types of survivorship curve, the one approaching the rectangular form corresponding to a very light mortality throughout the greater part of life and a very high death-rate at the latter end, which in its most extreme form would correspond to a single day of judgment for all The wild fruit fly tended towards this type The other was a diagonal survivorship curve corresponding to a constant force of mortality at all ages The vestigial type was nearer to this form. Between these theoretical extremes most life curves lay A third extreme form —also rectangular—was theoretically possible, and would result from a very heavy selective early mortality followed by a fairly constant light rate, but it was difficult to see how this could occur These observations raised the question of the biological explanation of the remarkable difference in the life duration distribution between the wild and vestigial type of drosophila

The Second Lecture

On June 9th Prof Pearl described further experiments on drosophila designed to elucidate the factors influencing the marked differences in mortality already referred to Food was the first environmental factor studied, the excess mortality on the banana medium over that on the synthetic medium had already been noted, but it was found that unless food variations were grossly outside the normal no startling differences in mortality occurred Density of population in the bottle, however, had early proved itself to be an environmental factor of weight, and series of experiments had followed up this point The first series involved 15,000 normal wild flies, the food used was the banana medium, and the flies were kept at 25° C in 530 1 oz phials at 20 different densities varying from 2 to 200 flies per bottle All bottles were of the same size with the same amount of food (5 c cm) in each It was found that an initial density of 35 flies per bottle was the optimum, higher and lower densities both gave higher mortality The age-specific death-rate curves, when plotted against different initial densities, tended to become flatter as age increased. The mean duration of life rose steeply as the initial density rose from 2 to 15, then more slowly, remaining almost horizontal, till a density of about 55 was reached, after which the mean duration of life declined steadily till the initial density was about 200 For higher densities the decline in mean duration was very gradual The main results were. (1) That the rate of mortality was profoundly influenced by the density of the population when the latter was confined in a limited space, the volume and surface of the food-supply being constant for all densities, (2) that the optimal initial density was about 35 to 55 flies per 1 oz bottle, and (3) that the deleterious effect of higher or lower densities was most pronounced in the first few days of imaginal life Prof Pearl said that these results had been many times confirmed, and that the same characteristics appeared with the new synthetic food medium as with the banana medium

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Further experiments on the inheritance of duration of life had proved (1) that genetic differences affected the duration of life, (2) that those differences were capable of isolation by selection and inbreeding, and (3) that they remained constant over a period covering 10 to 25 generations The experiments were as follows Pairs of virgin brothers and sisters had been mated and their progeny allowed to mate at random each within its own line only The different lines showed marked differences in mean duration of life. The inbreeding within the same line had been continued for seven months and the mortality retested in the progeny of another brother and sister in each line. The different lines stood in the same order as before as regards duration of life The interval had covered the biologically long period of 18 generations and there had been only *one* initial selection

Prof Pearl stated that these experiments had been many times repeated, hence it was confirmed that duration of life was—in part at least—controlled by genetic factors He continued, that when flies of the vestigial type (which had a mean duration of life only one-third that of normal wild flies) were crossed with the normal wild type the vestigial characteristics behaved as a simple Mendelian recessive character, the gene being in the sex chromosome In the first generation all were of the normal wild type, in the second the proportions of wild to vestigial had been three to one and the shorter duration of life was invariably associated with the rudimentary form of the wings of the vestigial type Tests as to the possibility of this being a purely physiological result of the handicap of inability to fly were made by clipping the wings of normal wild flies just after emergence Apart from the accidental mortality directly caused by the operation the subsequent age-specific mortality of the clipped flies did not significantly differ from that of the normal wild flies Further experiments showed that other genes besides that of the vestigial type affected the duration of life

Prof Pearl considered that the most reasonable explanation of this mass of clean-cut facts was given by assuming that duration of life was not a biologically separate character, but was an inclusive function of the organisation of the individual constitution This constitution being inherited, duration of life behaved as if it were itself inherited This view had been supported by other workers If the genetic constitution of the individual was known, and the environmental conditions were constant, then the duration of life could be predicted closely

The Third Lecture

The last lecture was given on June 10th, and Prof Pearl began it by discussing the *difficulty of* defining life The essence of life lay in dynamics not statics Vitality was a convenient term that might be defined as the intensity of vital activity and was dependent on the rate of transformation of energy If A denoted an external source of energy from non-living matter, B a living organism, and C the product—which might be (*a*) heat, (*b*) work, (*c*) the component matter of the organism, or (*d*) waste—then B might be looked on as an aggregation of matter that had the property of changing A to C by virtue of its pattern or organisation Any measurable manifestation of this transformation of energy might be taken as some sort of measure of vitality

One such measure was duration of life, and the first series of experiments to be described dealt with the total duration of life of drosophila when food was absent

Flies lately emerged were put into 1-oz phials at different densities without food The moisture conditions were carefully controlled so that there was no desiccation effect over and above starvation Dead flies were removed every six hours At density 50 the mean duration of life was about 45 hours, and when the survivorship distribution was put on a comparable scale with other results by taking as time-unit percentiles of equivalent life-spans, the distribution was found to be practically identical with that of the normal flies under ordinary conditions of feeding, hence, it appeared that in drosophila the form of the distribution of inherent vitality—i e, that depending solely on the individual pattern inherited—was the same as that depending also on environmental conditions

The growth of a seedling plant under sterile conditions in the dark and with no other food than that inherent in the cotyledons was next taken as another expression of the total organisation of the individual—i e, of B freed from A

Samples of 200 cantaloupe (*Cucumis melo*) seeds were drawn at random under the sole condition that the total weight should be constant, they were soaked for three hours, drained, placed in the incubator on agar plates, and examined at frequent intervals As soon as any seed showed signs of growth it was put on to a dish and kept in the dark at a constant temperature of 20° C The growth at the end of 48 hours was measured, and the cotyledons, stem and root parts were weighed separately to 0·1 mg

The inherent vitality could be expressed as a function of the two elements: (1) *the amount of* new substance added to the organism by growth, and (2) the time taken to accomplish the amount of growth In this case this time was fixed at 48 hours but the time taken for the seed to begin to germinate differed in different seeds and was clearly also dependent on the inherent vitality Comparison of the survival curves of starved drosophila and of the growth of the starved seedling in comparable time units showed that the form of the distribution of individual vitality, so far as it depended solely on innate constitution, was the same whether measured by growth or survival, the environmental conditions being constant for all individuals in both cases The two types of flies—normal wild and vestigial—which under normal food conditions (i e, A+B) had shown marked differences in mean length and distribution of survival were then both observed under starvation conditions (i e, B alone), and the differences in survival between the two types now disappeared The results were the same at all densities Hence it appeared *not* that the inherent vitality was altered by environmental conditions, but that the vestigial type was not able to take so much advantage of A conditions as the wild type The gene for the vestigial type had as part of its somatic expression a reduced duration of life, but under starvation conditions the differences between the two types arising from this no longer appeared owing to absence of A conditions for either

Prof Pearl next described his experiments investigating the relation of growth and survival in the *same organism* Single cantaloupe seeds were placed in long aseptic glass tubes without food and incubated in the dark at 30° C, they were examined regularly in a dark room with ruby light and the height of the stem was measured The growth of the stem followed a slightly skew form of the logistic curve described elsewhere by Prof Pearl as an expression of population growth The seedlings went through three stages (1) a period of active growth, (2) a period of suspended animation, not growing but still living, and (3) a period of death Death was a progressive process covering a number of days, and it had been found that the best point to take as end-point of life was the beginning point of death—i e., the time of the first appearance of abnormality in the stem The very definite result that emerged was a significant negative correlation between growth-rate and duration of life in the same organism of the order—0 46 ± 0 07 Prof Pearl claimed that this result gave numerical support to a suggestion made by him some years before in the "Biology of Death," that the duration of life was a function of two variables, (1) the constitution of the individual, and (2) the average metabolism or rate of energy expenditure during life If the latter were high, life would be short, and vice versa Another line of evidence that had subsequently supported this was that in man a positive relation had been found between age-specific death-rates from 40–45 on and expenditure of energy as measured by occupation, a high mortality being associated with high energy expenditure The negative correlation between rate of growth and duration of life remained unchanged when total growth and length of stem were kept constant Growth and duration of life were each only dynamic expressions of *part* of the inherent vitality These results suggested as a rational expression for total inherent vitality V, that

$$V - k_1 m_1 v_1^2 - k_2 m_2 v_2^2 - \qquad - k^n m_n v_n^2 = 0$$

where the terms such as kmv^2 represented energy expended on different things, and the k's were constants depending on the individual vital constitution There would be no great difficulty in getting V to a first approximation by making separate measurements of different expenditures of energy such as growth and metabolism, and Prof Pearl said he was doing this for seedlings Vitality was analogous to the potential energy of the charge of a Leyden jar

Summary

Prof Pearl then summed up the main results of his experiments In a single organism, the fruit fly drosophila, survivorship curves under normal food conditions were essentially different both in average duration and form, for the two different genetic types normal wild and vestigial, the environment being the same for both types Environment did have an effect on survivorship as by changing the density of the population it was possible to make the survivorship curve of the normal wild flies approximate to that of the vestigial type Under starvation conditions the differences in survivorship between the types disappeared Prof Pearl deduced that the two types possessed the same inherent vitality, which he defined as the total capacity of an organism to perform actions in the complete absence of any exogenous source of energy Hence the reason why neither density nor type produced any differences under starvation conditions was that they were both only preventive in action under normal conditions Duration of life was by no means the only expression of vitality, growth was another There was reason to expect that individual differences in inherent vitality would have the same distribution whatever expression was chosen for measuring them This had been shown to be true for duration of life and growth. When measured in the *same* organism there was a negative correlation between rate of growth and duration of life All this evidence pointed to the conclusion that duration of life varied inversely as the rate of living—i e , the rate of expenditure of energy Prof Pearl ended with a warning that these results were not final and that mortality like other biological characteristics was essentially capable of change

Reviews and Notices of Books.

CYSTOSCOPY

By JAS B MACALPINE F R C S, Hon Surgeon and Surgeon in Charge of the Genito-Urinary Department Salford Royal Hospital Bristol J Wright and Sons, Ltd 1927 Pp. 284 25s

WITHIN less than 300 pages Mr MacAlpine has written an account of cystoscopy, as practised in this country, which contains all the information essential for the performance of this rather specialised method of examination The author deserves special praise for his straightforward simple instructions, by following these the beginner will avoid many pitfalls and overcome the many difficulties which will beset him in his earlier experiences Surgeons and patients alike will profit by the author's frank declaration (p 37) that the local application of novocaine to the urethral mucosa is often ineffective for abolishing the pain of cystoscopy in the male After the earlier chapters dealing with the construction of the cystoscope, its care, sterilisation, and introduction, are sections describing the various normal and pathological appearances of the bladder These are beautifully and faithfully illustrated in colours In the chapter on vesical tumours, full details of the method of treatment by diathermy are given, its indications and its limitations being well set out The vexed question of the treatment of ureteral stones is considered in a simple, practical way, whilst the accounts of pyelographic technique and renal function tests conform with the generally accepted teaching

Altogether the author is to be congratulated on the production of a book which is likely to rank as a standard English text-book on the subject

SURGICAL DIAGNOSIS

Exploration Clinique et Diagnostic Chirurgical Second edition By FELIX LEJARS, Professeur de Clinique Chirurgicale a la Faculté de Médecine de Paris, Chirurgien de l'Hôpital Saint-Antoine Paris Masson et Cie 1927 Pp 911 Fr 120

THIS is a new enlarged edition of Prof Lejars's work, which first appeared four years ago It has been widely read and has achieved well-deserved popularity Its value lies in the fact that it describes in detail the ordinary simple clinical examination of surgical patients, such as is done in the out-patient department without the aid of laboratory tests The observations recorded were all made by the author, so that the reader feels that there is a substantial basis for all his statements It is an attractive book, whose reputation will be enhanced by the revision it has undergone and the addition of 187 new pictures

SEXUAL KNOWLEDGE AND HYGIENE

Sex Hygiene By Dr JULIA VON SNEIBERN and Dr ALMA SUNQUIST Translated from the Swedish by MARY E COLLETT, of Cleveland, Ohio London George Allen and Unwin 1927 Pp 114 7s 6d

Sexual Knowledge By WINFIELD SCOTT HALL, Ph D , M D Leipzig, Professor of Physiology, Northwestern University Medical School, Chicago. London T Werner Laurie Ltd 1927 Pp 320. 6s

THE book by Dr von Sneibern and Dr Sunquist, now translated into English, was originally written as a reference book for parents and teachers 15 years ago In Sweden at this time there was no mention of reproduction in the secondary school courses on biology or hygiene, and few physicians were equipped to teach on the subject It has since been kept up to date The aim in translating the book into English was to provide, in small compass, an objective treatment of the subject for teachers and college students of hygiene in America After two chapters dealing with the anatomy and physiology of the reproduction organs come chapters devoted to embryology pregnancy and delivery Next are described the hormones of the sex glands the venereal diseases the sexual abnormalities, race hygiene, and sex education The book, which contains 28 illustrations, is clearly written and well translated from the 1925 Swedish edition It is noteworthy among numerous books devoted to this and kindred topics by its complete freedom from sentiment The assumption is made throughout that the reader wants facts, and with these he is presented with the minimum of embroidery The nearest that the book gets to propaganda is to state that if it is desired that prostitution should disappear it is necessary that the attitude of men towards it be altered and that the reproduction should be prevented of persons of bad stock of those suffering from contagious diseases transmissible to the embryo, and of debilitated women But these are not so much propagandist statements as observations of self-evident truth The book well fulfils the purpose for which it was written, and can be recommended to those who, upon the subject of sex, desire more information

Dr Scott Hall's book is written in a style in which sentimentality and vehement exhortation are intimately commingled For example, to the child, desirous of knowing whence his baby sister has come, the following answer is suggested "Baby sister came out of mama's body, she was formed within mama's body out of materials drawn from mama's blood, and that is why mama's cheeks are so pale and mama's hands so thin and white", while the author describes the nefarious consequences of masturbation in terms that might cause despair to those boys who have difficulty in overcoming the habit In the medical world there is some division of opinion as to whether the habit of masturbation in adolescence is better overcome by magnifying the evils (and therefore the importance) of the practice than by treating it as a weakness of no great moment but, on the whole, better avoided The author obviously belongs to the first school, most of the modern teaching leads to the second. The virtues towards which the sexes should aspire are extolled in language, the vigour of which will probably appeal less to English than to American readers, and indeed this may be said of the whole book

MAGNETISM AND MAGIC.

By BARON DU POTET DE SENNEVOY Edited and translated by A H E LEE London George Allen and Unwin 1927 Pp 154 6s

Baron du Potet (1776–1881) was an idle child who took to mesmerism in early manhood and practised the magic art with great success through a long life About 1838 he visited England, and in cooperation with his fellow in the faith, Dr John Elliotson, treated patients at University College Hospital until the Managing Committee interfered In 1852 he wrote "La Magie dévoilée," of which this is an abbreviated translation It represents an entirely uncritical and unintelligent attitude towards the subject, and Mr. Lee would have been better advised to have issued his own interesting historical introduction and biography of Du Potet and left the Baron's own writings in the obscurity which they deserve All open-minded persons must allow that it is conceivably possible that one mind should influence another without the customary means of communication and that the mind should on occasion have an exceptional influence on the body But whether the possibility has received adequate demonstration is a question which needs far more serious discussion than Du Potet could give it

NORMAL HISTOLOGY

Thirteenth edition By G A. PIERSOL Revised and reset by WILLIAM H F ADDISON, B A, M D, Professor of Normal Histology and Embryology in the University of Pennsylvania London J B Lippincott Company 1927. Pp 477 25s

THIS book, in its revised form, has been designed to serve as a basis for the study of pathological histology Since the author has described only human tissues the matter is not swollen with observations on comparative histology which, however interesting to the biologist, are sometimes tedious and obstructive to the student who wishes to refresh his memory on a point of human structure Special attention has been given to those organs whose histology must be studied before disease processes as revealed at autopsy can be understood, and less space is given to descriptions of such tissues as yellow fibrocartilage In the system of classification, areolar tissue has been deposed from the position of eminence which it has held in many English text-books—namely, as a principal form of connective tissue—and figures merely as a synonym for loose fibrous tissue; teachers of normal histology in this country would do well to follow this lead It is disappointing that the author has dismissed the reticulo-endothelial system so briefly A summary of the histology of this system would be useful to the medical student, not only as an introduction to a subject of which he will hear much in his pathology course, but also as a study which gives a comprehensive view of the nature and function of tissue cells

The book is profusely and excellently illustrated The 432 illustrations, 43 of which are in colour, are well chosen and so arranged that their relations to the printed matter are readily seen In an appendix of 29 pages a helpful guide to histological methods and technique is given This includes a very short account of tissue cultivation, micro dissection, and supravital staining of blood The author cites the Parlodion method of embedding tissues as that most usually selected for "the production of thoroughly good preparations for general histological study." Many histologists will not agree with this dictum The terminology used, for example, basophilic granulocytes, epiphysis cerebri, &c, is not a familiar one in this country and may puzzle the British medical student These points are, however, far outweighed by the fact that the book is concise and the teaching sound

BOTANY

Plant Autographs and their Revelations. By Sir J C BOSE, F R S London · Longmans, Green and Co 1927. Pp. 231, 120 text figures. 7s 6d

FOR a quarter of a century the author has been analysing the activities of plants, and especially their movements, by adaptations of the graphic methods familiar in physiology which he has in some cases refined to about the limit of their accuracy His researches have been made known in a number of publications, and he here gives a semi-popular account in which he covers the whole field This summary is uncritical in the sense that he takes no notice of objections to his methods and results which have been raised by other plant physiologists, and the general reader would have appreciated some statement of the difficulties in the way of accepting the author's view that plants have a nervous system closely analogous to that of the higher animals The frontispiece is a good portrait of the author, and the volume appropriately closes with a picture of the Institute in Calcutta which commemorates his devotion to the pursuit of knowledge

READABLE SCHOOL BIOLOGY.

By O H LATTER, M A, late Science Master at Charterhouse London: G Bell and Sons 1927. Pp 143, 48 text figures 2s 6d

MR Latter has for so long been known as one of the relatively few successful teachers of biology in our schools that this summary of his mature experience will be examined with attention and respect The book hardly covers what is generally known as "biology"; it deals rather with the individual physiology of animals and plants without much reference to their relations to the rest of the world As we should expect from such a teacher, there is no attempt to pretend that there is any easy road to knowledge, the subject matter is solid and the treatment serious We note, too, the emphatic opinion that practical work is waste of time for pupils who are taking biology as part of a general education But why the book should be called "readable" is not obvious It seems, in fact, to be a highly condensed summary which will surely need a good deal of elaboration and explanation in class Technically it may be noted that there is a good deal of doubt whether the "gills" of mussels (p 28) are really or mainly respiratory in function

BOOKS TO READ.

To begin with, being Prophylaxis against Pedantry. By RAYMOND PEARL London and New York A A Knopf 1927. Pp 96. 6s.

Prof Pearl has made a list of 70 books which he thinks would form a good basis for the reading of his graduate students who purpose to become biologists, biometricians, and vital statisticians It is a varied catalogue—Lucretius, Lucian, Rabelais, Mencken, Hugh Miller, Darwin, Yule, and most other sorts—and without doubt anyone who worked earnestly through the list would be very much the better for it And if anyone does, Prof. Pearl will laugh, and say that that shows they have missed the main point of his introductory chapter and running commentary. A wealth of learning sits lightly on the author, and he is always welcome as one who can be serious without being solemn But he is not quite at his best when he lets his humour have its way; it slips rather easily from comedy to farce All of us will find that we have not read several books which are necessary for our educational salvation; the practical bibliographical notes will help us to get ourselves straight

THE LANCET.

LONDON, SATURDAY, JUNE 25, 1927

THE PERSISTENCE OF THE SLUM

A NOTE of complacency has recently crept into icial statements regarding the housing programme, contrast with the situation revealed in the ports of medical officers of health which we mmarise from week to week A short time o Sir **KINGSLEY WOOD** said that since the mistice 866,000 new houses had been completed, fewer than 217,000 of these within the twelvemonth ded on March 31st last , and in an admirably lucid apter of his recent book [1] dealing with the shortage houses due to the cessation of building during the ar, Lieut -Colonel F E **FREMANTLE**—putting the mual need of houses at 120,000 and the present annual itput at 190,000—calculates it should only take till id-1930 to reach conditions better than those isting in the pre-war census year of 1911 But all is building has only touched in the smallest degree, at all, the conditions under which the really poor e housed The Minister's total of 866,000 houses cludes 112,742 that are rated above £26 per num Even when the grosser forms of post-war ercrowding have ceased to exist there will still main, as Mr **NEVILLE CHAMBERLAIN** writes in prefatory note to Colonel **FREMANTLE**'s book, e problem of the slums It is hardly possible, r is it strictly necessary, to define exactly what is eant by a slum The fact that it is cognate both with e word slump and the German word for mud fficiently indicates the dual aspect of the problem uch it creates For while, as Mr G H **DUCKWORTH** ites in a Special Slum Number of *Garden Cities and wn Planning,*[2] the slum inhabitants are not cessarily *very* poor or necessarily bad, they are ually thriftless, irregularly employed, rough in their inners, and unclean, thus constituting a social orld of their own On the physical side disease urishes in slum surroundings Sir **JOHN ROBERTSON** mpares two artisan areas in Birmingham of approximately the same size, in one of which the houses are id, and in the other fairly good The former has a rth-rate of 33 and a death-rate of 21, compared with and 12 in the latter The infant mortality among e badly housed population is almost double, the ath-rate from measles more than treble, from irrhœa quadruple, that of the better-housed district king typical slum areas in three county boroughs **FREMANTLE** finds the death-rate from tubercle each case to be more than twice that of the rate in e whole city But the slums are not saddled with ysical disease only, for, as he says, it is in them that e dregs of mankind converge in the most decadent uses and the least delectable districts, men and uses together constituting the slum , the casualties modern life are sucked down into it by the thousand d fasten on it a reputation from which both men d houses suffer until recovery becomes beyond pair. That, at all events, is not too lurid a picture the situation in London

In the same issue of *Garden Cities and Town Planning,* the Editor, Mr W L **HARE**, puts together figures drawn from official sources during the five-year period 1920–24, giving a more exact picture than can be found elsewhere of the present state of insanitary housing During this period 7½ million houses were inspected by local authorities under various Acts and regulations, when 1½ million of them were found to be either unfit or not reasonably fit for human habitation The number is ominously large, although the standard set by sanitary inspectors is believed not to be unduly exacting Something like 1¼ million houses were rendered fit in obedience to the authorities, leaving 174,426 whose condition was more serious Of these, 12,690 were ordered to be closed, but 3023 were reopened on being rendered fit, the "fitness" being presumably a temporary quality Of the condemned houses only 3111 in the five years under review were actually closed, and on the positive side 3898 dwellings in all were supplied in place of demolished slums, making a miserable credit balance of only 787 houses At this rate of progress elimination of the unhealthy area will not be a question of years but of generations Nor is the abolition of the slum easily amenable to the solution of providing alternative dwellings The cry of the slum-dweller is ever to be rehoused in cottages on the same site, for by removing a man from his work hours are wasted each day in travelling Cottages, however, cannot be built in cities and these people have an instinctive dislike to the block buildings which would make it possible to provide them with adequate homes near their work, preferring to have a bit of yard and space to keep poultry or rabbits Scottish experience, furthermore, shows that in tenement dwellings children are kept indoors at the expense of their health and spirits, and it is certainly a sound principle that in all rehousing schemes the main object should be ease of access to the open air in the interests of the children rather than proximity to work in the interests of the breadwinner A practical difficulty, however, lies in the fact that in London and the big cities the passenger traffic at the rush hours is already approaching its limits, and no doubt the final solution will be found in the "grand policy" of the Garden Cities Association, which consists in the removal of a certain body of industries, along with the population serving them, to satellite towns on rural sites

The problem is not as hopeless as is supposed by those who hold that the slum-dweller carries the slum to whatever surroundings he is moved Experience in Glasgow has convinced Dr A S M **MACGREGOR** that rehousing does eliminate the greater part of their "slum qualities" Out of 835 removals the results were reported as very good in 510, and only 44 were "dirty" after the change Unhappily, even in their present state, the slums are often lucrative property, and to buy them up at market value would be almost prohibitive in cost, though it is to be noted that under the 1925 Act the basis of compensation, where buildings are closed on account of their insanitary condition, is the value of the land regarded as a cleared site Moreover, it is untrue to say, as many people do, that nothing can be done to improve conditions until money is found for the reconstruction and removal of dwellings The problem is not one of building alone Even assuming, as Mr **CHAMBERLAIN** does, that a very large proportion of workers must continue to live near their work in present-day industrial centres, there is much to be hoped from enlightened management of house property Mr **CHAMBERLAIN** has given his deliberate opinion that the faulty management of the past has been largely responsible for the carelessness and destructiveness of the slum tenant It was, as everyone knows, the late Miss **Octavia Hill** who showed how the business of rent collecting undertaken by women of tact and sympathy without a hint of meddling or intrusion, might become a great humanising force Even now many local authorities are able to secure all necessary repairs by friendly conference with owners and without recourse to statutory notice An Association of Women's House Property Managers[3] is carrying on the work begun by Miss **Hill**, and public utility societies are beginning to acquire and renovate house property in congested districts There is here a great opening for the service of trained women

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[1] Housing of the Nation By Lieut Colonel F E Fremantle P F R C P, F R C S, D P H, Consulting Medical Officer of ealth for Hertfordshire London Philip Allan and Co 27 Pp 193 8s 6*d*

[2] April–May 1927 Price 1s From the Garden Cities and wn Planning Association, 3, Gray's Inn place, London, W C

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BASAL BRAIN TUMOURS

The few surgeons who have as yet specialised in surgery of the base of the brain have not been discouraged by the extreme difficulties associated with the removal of basal tumours from their inaccessible situations, knowledge has gradually been accumulated by them, with the result that the removal of part of the pituitary body or a tumour of the acoustic nerve are recognised procedures Clinically, basal brain tumours often grow in the neighbourhood of large and important nerves, so that they can be accurately localised, although they are quite difficult to reach Thus acoustic tumours give very distinctive signs, and there appears to be another group of tumours which grow from the front part of the cranial cavity in the olfactory grooves, exerting pressure upon the olfactory nerves and the frontal lobes, and ultimately giving rise to symptoms suggesting pituitary new growth Successful excision even of a tumour lying in the olfactory groove can now be contemplated

Our present issue contains good evidence of the interest shown in this difficult branch of surgery by leaders of surgical thought outside this country Prof **Harvey Cushing**, of Harvard, has taken the meningiomas which arise from the olfactory groove as the subject of his Macewen Memorial Lecture Dr **Oskar Hirsch**, of Vienna, calls attention to certain clinical phenomena of pituitary tumours, describing especially the ocular symptoms associated with them Speaking with the authority of one who has performed 100 operations upon hypophyseal tumours, he divides tumours of the hypophysis into two great groups a benign group in which simple adenoma is present, and a malignant group comprising tumours which, whatever their minute structure may be, take on a malignant character The fundamental difference between the groups lies in their mode of growth in the former the tumour does not tend to emerge from the pituitary fossa upwards into the general cavity of the skull, extension upwards is characteristic of the second group The optic chiasma does not lie directly in the optic groove, but somewhat above and behind it, and it is only pressed upon by a pituitary tumour which emerges from its fossa The ocular signs are primarily an optic atrophy with bitemporal hemianopia, papillœdema and active neuritis are uncommon phenomena If they exist, the diagnostician should be sceptical of the existence of a pituitary tumour unless other symptoms render it a certainty Prof **Cushing** describes the clinical features of tumours which originate in the neighbourhood of the olfactory groove They are not very common, but when they occur they give rise to a clinical picture which can be recognised provided that a careful history has been taken Having established the presence of such tumours it became necessary to devise a technique for their removal, radical extirpation in the case of a meningioma giving the patient a good prospect of permanent cure The growth is reached by an osteoplastic approach from the front, just as an acoustic tumour is reached by exposing the *cerebellum* There is another parallel between the two tumours in that their removal is accompanied by the danger of severe hæmorrhage One patient upon whom Prof **Cushing** operated survived, but only after passing through a serious illness and submitting to three operations in each of which the danger of hæmorrhage was encountered It was then that Prof **Cushing** turned his attention to methods of removal other than simple curettage The first patient upon whom he used modern electro-surgical methods, to which we recently called attention[1], passed through the ordeal without running any serious risk and with relief from his tumour at one sitting The performance was repeated on another patient with a similarly happy result The operation demands the most exacting attention to detail and the avoidance of all hæmorrhage, the first tumour took seven hours and the second one nine hours to remove The apparatus used by Prof **Cushing** is one devised by Prof W T **Bovie**, it resembles **Wyeth's** endotherm knife in that both coagulating and cutting currents are combined in one machine, but in **Bovie's** instrument the current is so powerful that for both purposes a loop may be employed in place of the straight needle. Such operations imply the utmost endurance on the part of surgeon and the theatre staff, but now that the way has been pointed out, development of technique should shorten the time required The restoration to health, by the removal of tumours from the base of the skull, of two patients who had become mentally deficient is a new land-mark in surgery.

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ANÆSTHETICS AND INQUESTS.

From time to time public apprehension about the danger of anæsthetics appears to be quickened to an almost unreasonable pitch The cause of this state of fear, which seems to be entirely unjustified, is no doubt mainly the publicity given to fatalities occurring during anæsthesia This publicity is often so scanty and indiscriminating, and therefore so startling, that the ordinary newspaper reader is naturally alarmed He has not knowledge enough, nor is he sufficiently supplied with facts to realise that in many cases the death which alarms him was not due primarily or even mainly to an anæsthetic It is the fashion to-day to believe in the universal benefaction of publicity, "bring the truth to light," "expose all the facts"—these and similar slogans are the general recipe for avoiding trouble in public and private affairs A departure, however, has recently been made in the law which prevents full reports of divorce proceedings, and it may be argued that there are other topics on which a discretionary silence serves the public better than does full publicity It is certainly open to question whether this doctrine does not apply to reports of fatalities during anæsthesia The advocates of publicity maintain that it is by public inquiry alone that the minds of relatives and friends can be adequately set at rest and that they can be assured that there has been no question of negligence or lack of care Surely a private inquiry conducted with the same consideration and thoroughness that the coroner now devotes to his task, but not open to public description, would be equally convincing to all concerned? The present publicity of these inquiries may, indeed, have the advantage of deterring the inexperienced from running the risk of having to appear before the coroner and

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Hon Sec, Miss A Churton, 3, Bedford square, London, W C 1

[1] The Lancet, May 14th, 1927, p 1031

explain an anæsthetic fatality. They have, however, the undoubted disadvantage that they instil fear into the public mind, thus deterring from operation some who would benefit by the surgeon's aid, and leading others to take anæsthetics in such trepidation that the possible dangers of the process are increased to the maximum. They may have moreover, a disastrous effect on the nerve of any young administrator of anæsthetics who has been so unfortunate as to figure in the coroner's court.

That the actual number of deaths during anæsthesia has risen in recent years no one in possession of the facts will, of course, deny. Some of these facts were set out recently in our own columns by Dr. A. G. LEVY.[1] In his annual report for 1925, which has just appeared, the Registrar-General gives 442 as the total number of deaths under anæsthetics occurring in that year, a number which, he remarks, is for the sixth time in succession considerably higher than in any of the years from 1911 to 1919—1911 being the first year in which complete figures were available. That the number of deaths has increased out of proportion to the increase in the number of operations performed is, however, not the experience of the large hospitals which keep accurate records; in these institutions at any rate, the proportional death-rate of anæsthesia has not only not risen but has actually diminished. It is obviously impossible even to guess at the truth for the country at large. Who has the least idea of the number of operations performed daily in innumerable small and cottage hospitals, and in private practice? There is no available register for the anæsthetics in these thousands of cases. Yet a single fatality occurring among them most probably comes to light and attracts attention. Another fact to which attention has been prominently directed is the increase in the number of deaths due to ether. In 1925 ether was the sole anæsthetic used in 113 cases as against 83 in which chloroform alone was given. But here again it is common knowledge that ether has largely replaced all other general anæsthetics as the routine agent for the conduct of major operations. It is only to be expected, therefore, that the number of fatalities put to its discredit would rise in accordance with the great increase in serious operations. It is doubtless true that this preponderating employment of ether, particularly in very grave operations, has made more obvious dangers which are involved in its extensive use and also, as shown in a recent article by Dr. S. R. WILSON,[2] the importance of using only ether of the strictest chemical purity.

There is, then, a certain amount of dissatisfaction with the present system of inquiry into deaths from anæsthetics. This dissatisfaction exists not only on the part of anæsthetists. Coroners themselves are not all entirely satisfied with the present arrangements, for they are aware that the notification of deaths is not so complete as they would like to see it, and that in the recently amended Coroners' Bill no notice has been taken of the recommendations of the Home Office Departmental Committee, which reported as long ago as 1910. The objection which anæsthetists raise to the present procedure is twofold. First, they disapprove of the unreasonable grounds on which an inquiry is demanded and secondly, they disapprove of the nature of that inquiry. Regarding the second objection, they maintain that the anæsthetist is often exposed to an interrogatory which suggests that he has been guilty of a misdemeanour, and that his conduct is being criticised by a man who possesses no special knowledge to justify him in adopting the critic's rôle. Further, the anæsthetist contends that these inquiries not only do nothing to further scientific knowledge and so help to diminish danger, but also waste valuable information which might be elicited if they were otherwise conducted. As regards the reasons for holding the inquiry at all, the anæsthetists maintain that it is illogical to separate those deaths which are apparently due to anæsthetics from those that are apparently due to operation, holding the former as not natural, and the latter as natural deaths. In a great number of these cases, of course, it is a nice question how far the anæsthetic, and how far previous illness, operative shock or hæmorrhage has been the cause of death. It is obvious that no finality has yet been reached either in reducing anæsthetic deaths to their lowest possible figure or in investigating them, when they do occur, in the most advantageous way.

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[1] THE LANCET, Jan. 22nd, p. 173.

[2] Ibid., May 28th, p. 1117.

Annotations.

"Ne quid nimis."

THE ECLIPSE AND DARK-ADAPTATION

WE have already dwelt on the danger which awaits those who view the coming eclipse of the sun with the naked eye, and pointed out the precautions which it is necessary to adopt. The warning applies not only to those who may be fortunate enough to witness it in the zone of totality, but to those who, supposing next Wednesday morning to be cloudless, may be interested enough to watch the partial eclipse, visible from any part of the country. For those in the zone of totality, dark or smoked glasses, or a specially prepared film, are only necessary before and after the sun's disc is wholly obscured. During this short phase the observer is better without it, and in order to see the unique phenomena to the best advantage it is essential that the eyes of the observer should be kept in the dark beforehand, preferably for some 20 minutes—that is to say, they should be "dark-adapted." If anyone goes from a well-lit room into a completely dark one it is only gradually that he can see anything at all. In the same way, those observers in the zone of totality who do not take care that their eyes are dark-adapted will miss some of the features which should be visible during the 20 precious seconds to those who have taken it. Without this precaution, indeed, Dr. Waterfield tells us, the corona, except for its bright lowest layers, will be very difficult to see.[1] He suggests a simple way of securing dark-adaptation by means of an opaque mask, lined say with velvet, in which are two eyeholes occupied by screens so deeply tinted as to allow the sun to be only just visible—the mask to be removed the moment the totality phase begins and replaced the moment it ends. Such a mask, with removable screen, either of a uniform darkness or of a graduated tint which can be easily placed in the position in which the appropriate shade is obtained, has been put on the market for the special purpose of this eclipse.[2] Those who see it without such a device must take special care to replace their dark glasses (or other shading apparatus) the moment the sun's crescent reappears out of the shadow.

HOUSE DUST AND ASTHMA

THE part attributed to inhaled proteins in the production of the typical symptoms of hay-fever and asthma adds yet another to the long list of immediate exciting causes of these diseases, though we should hesitate to ascribe to them all ætiological significance. Dr. A. H. Rowe[3] has recently published a study of 162 asthmatics and 20 patients suffering from hay-fever in whom he carried out an investigation with various kinds of house dust. The work was done in California, where pollen of one kind or another is present in the air for ten months in the year. In his series of cases Dr. Rowe found 42 per cent. of patients sensitive to house dust extracts and he believes that certain patients who develop asthmatic attacks a few hours after retiring to bed may be sensitive not only to those substances which go to the make-up of their bed-clothes, but also to the dust of the bedroom which gradually accumulates on the mucous membranes until enough absorption has taken place to cause symptoms. He notes, further, that these dust-sensitive patients are often worse in the winter months when they tend to be confined to their rooms for longer periods of the day. It has been suggested that a new specific principle in house dust may be responsible for sensitisation in these cases, but Dr. Rowe, after testing a large number of such dusts, is not in agreement and considers that various vegetable and animal particles are responsible in different cases. The data collected by him, indeed, show that reactions to dust rarely occur without one or more positive reactions to proteins commonly used in sensitisation testing. In all such cases desensitisation should obviously include very thorough cleansing of living and bedrooms.

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[1] THE LANCET, June 11th, p. 1268.

[2] By Messrs. T. Hamblin Ltd., 15, Wigmore-street, W.

[3] Rowe, Albert H.: Archives of Internal Medicine, 1927, xxxix., 498.

On somewhat similar lines is the work, an account of which appeared in our columns last week, of Prof. W. Storm van Leeuwen, Dr. W. Einthoven, and Dr. W. Kremer on climatic allergens. These authors recognise two groups of asthma-inducing substances in air: group A found in the open air and group B in private houses where presumably dust is allowed to accumulate. The nature of the allergens of group A is unknown, though the authors consider they have proof of their existence; whilst group B probably includes many substances, amongst which Prof. van Leeuwen considers the fungus *Aspergillus fumigatus* to be an important one. This fungus is especially liable to grow in damp, ill-ventilated houses. The authors have devised several methods of removing these climatic allergens: one of the important means being a special air-tight sleeping chamber suitably ventilated by mechanical means. Two years ago a clinic was started in Leiden, and the authors record good results not only with asthma but with whooping-cough and pulmonary tuberculosis. Quite apart from the difficulty of interpretation in the case of the last two diseases, the asthma group is, of course, notoriously complex and many ætiological factors may be at work. The researches cited above seem to suggest that the inhalation of protein matter, especially of fungi, may be the immediate exciting cause of one group of cases. In this case modern methods in house construction and decoration, with the abolition of all heavy curtains and carpets, seem likely to have an important bearing on cure.

FOOT-AND-MOUTH DISEASE.

DURING the past two years British, German, American, and Scandinavian workers have shown great activity in the investigation of foot-and-mouth disease. A further instalment of detailed research carried out by Dr. S. P. Bedson, Mrs. Y. M. Burbury, and Dr. H. B. Maitland for the Foot-and-Mouth Disease Research Committee of the Ministry of Agriculture has been published in the *Journal of Comparative Pathology and Therapeutics* for March, 1927. The period covered is the same as that of the Second Progress Report noticed in THE LANCET of March 5th (p. 499), but certain aspects of the subject are considered in greater detail. The paper is in three parts, the first of which deals with the possibility of producing an active immunity apart from an attack of the disease. Not long ago this was generally held to be a hopeless pursuit, for until last year it was agreed that a dead vaccine gave no protection, and many observers doubted the existence of any notable immunity even after an attack of disease. The first of these bogies ceased to hinder progress when Vallee, Carré, and the British workers whose names are given above showed that virus treated with formalin and used as a vaccine produced a very definite immunity. In guinea-pigs the resistance is of a fairly high grade, comparable to that following a dose of immune serum, and in these animals it appears with surprising rapidity and lasts for some weeks. The observation that repeated attacks might affect the same animal within one year had a disheartening effect in the past, but these early recurrences of the disease have been explained, and to some extent discounted, by the discovery that there are two or more distinct immunological types of foot-and-mouth disease which do not protect against one another. The existence of these immunological types is now recognised in France, England, Germany, and Sweden. The subject of prophylactic vaccination is still only in an initial stage of experiment, and it is much too early to assess the possible value of a vaccine, especially as very few experiments with cattle have so far been made and polyvalent vaccine would be required. One great obstacle to the practical use of such a method is the difficulty in obtaining large quantities of virus from which to make vaccine, since propagation of the virus in artificial culture has not yet been achieved. The second part gives an account of experiments dealing with the survival, sometimes for several weeks, of virus dried in the air on different materials. This important work is far from finished and the conditions which promote viability need much further study. The third part gives the results of attempts to infect rabbits and rats. They do not suggest the existence of a natural disease in these animals, but are interesting because they show the difference of susceptibility in allied species or races—e.g., in wild and tame rats. The American Commission which has been working at Strasbourg during 1926 has recorded some interesting observations on the similarity of vesicular stomatitis of horses and foot-and-mouth disease of cattle. P. K. Olitsky and L. Boez,[1] two members of this Commission, have especially studied the resistance of the virus to alcohol, recorded by the English observers, and put forward the view that the virus is protected by the coagulation of particles of serum protein around it, even when the amount of serum present is very small. They show that if alcohol is used in a liquid with a pH of 8.2 the virus is killed as quickly as staphylococci, and they attribute this to the absence of coagulation of the proteins under these conditions. H. Magnusson and K. A. Hermansson[2] in Sweden have confirmed the existence of two types of disease in their country, have made observations on the occasional rapid disappearance of infection from cattle stalls, and have searched for but failed to find evidence of human cases or carriers of the disease which C. Kling considered a probable source of danger. Altogether the rapid strides made of late in the study of this scourge of agriculture, and the continued activity of research workers in different countries, are of good presage for the future. It is encouraging to find so many facts now known about the disease and its virus where two or three years ago there was little save conjecture.

THE CASSEL HOSPITAL

THE fifth annual report of the medical director of the Cassel Hospital at Swaylands is issued in a new form. The tables published in previous years have been omitted, and the report consists of a review of the patients discharged in each of the years since the hospital opened. The results have been encouraging, so much so as to emphasise still further, if it be possible, the great and increasing need of the country for more institutions of this kind. The psychoneuroses are becoming more common every year; they are responsible for as much misery and loss of efficiency as any other class of disease, and they are comparatively curable. Many persons go to Swaylands quite incapacitated by some failure of mental function which can be remedied by relatively simple means; they are discharged healthy and useful citizens. A far greater number of similarly afflicted persons still continue untreated, largely because they have nowhere to go, until they are certified or attempt to take their lives Along with the provision of more new accommodation, a vigorous extension of facilities for voluntary treatment is essential if the country is to meet the ever-growing demand created by the increasing complexity of civilised life During 1925 182 patients were discharged from Swaylands, 28 of them for more than the first time Of the 93 suffering from psychoneuroses who have reported on their condition after a year in the outside world, 69 state that they are much better, 23 that they are unimproved, and 1 that he recovered after an operation Of the psychotic cases, 5 out of 8 suffering from depression have recovered, but 7 schizophrenics and 3 hypochondriacs did not benefit One of the most valuable features of the Cassel system is the care with which patients are observed after their discharge and the reports received from patients discharged in the years previous to 1925 form a gratifyingly large percentage of the possible number The medical director makes an interesting comment on the fraction of patients who report that they were unimproved when they left but got better soon afterwards. The one outstanding basis of classification in functional nervous disorder is, he says the response to the question "Is the patient willing to take up the responsibilities which cure implies, or is he unable to face them?" If he is willing, his recovery will be comparatively easy, if he is unwilling it will be difficult The willing patient is a puzzled person who has lost his way, and any reasonable plan will help him To benefit an unwilling patient may however, be a most complicated task. It may involve changing not only his environment but certain aspects of his character. Now, most of the patients who said they got well after discharge but not before, were those between whom and the doctor there had been a considerable amount of friction or dislike It is a commonplace that a patient enters on analytical treatment with a considerable amount of unconscious resistance and that when this is resolved his relations with his physician become proportionately improved The patients Dr T A Ross describes here are, however, generally those whose "negative transferences" persisted up to the date of their discharge It is quite natural he says, that they should not have been able to accept help from someone they had considered unsympathetic It is not unreasonable to infer that most of them had benefited from the Swaylands treatment more than they were willing to admit, even to themselves One, for instance, was immediately cured by another course of psychotherapy, another by a few enemata of plain water, a third by faradism Dr Ross's report is outstandingly different from the ordinary mental hospital report good though that often is It contains clinical matter of great value and all who devote themselves to the psychological and functional aspect of psychiatry will find in it much to interest them

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[1] Jour. of Exp. Med., 1927, xlv., 815.

[2] Acta Path. et Microbiol. Scand., 1926, iii., 737.

THE LONGER CATECHISM

THE immense importance of obtaining a correct clinical history is universally acknowledged, it is one of the criteria by which the efficient medical man is distinguished from the inefficient, the conscientious from the careless Our sympathy therefore is readily attracted by any suggestion which may seem to make casetaking easier and more effective Under the title of "Automorbografia" Dr Emilio Mira Director of the Institute of Professional Orientation in Barcelona propounds a plan which aims at bringing this about[1] His suggestion is that every patient should be provided with a questionnaire somewhat in the form with which we are all familiar in the case of insurance companies but vastly more elaborate, to be filled up before coming to the doctor The schedule is a formidable one occupying two and a half quarto pages, and containing over a hundred questions which cover every detail of the patient's daily life, his tastes habits and occupations, not to mention his mental and moral equipment It is preceded by a few lines of instruction and explanation of the reasons for this request, and an assurance that it is quite confidential

It may be said at once that this is one of those admirable projects often miscalled counsels of perfection, which everyone applauds and hardly anyone ever adopts for the simple reason that in a busy world life is not long enough. At a moderate computation it would take two hours to fill up the form conscientiously and in a large proportion of cases many of the questions could only be answered doubtfully or not at all Patients are asked to say, for instance on what milk they were reared to describe hour by hour and "with all minuteness" a day and night of their ordinary lives, and to estimate their own characters In England at all events it is certain that many patients confronted with such an inquisition would seek another physician; the neurotic alone would welcome it as an excuse for giving a life-history of his woes And yet there is much to be said for a short scheme which would enable the patient to see with what questions he will be faced and to fill in dates and facts of family or personal history which would require time to recall But oral examination cannot be dispensed with, it gives an insight into the character and credibility of the patient which nothing else can and notwithstanding the author's instances to the contrary often brings out facts which would not be put down in writing To answer an interrogatory with real accuracy requires more training and practice than the average patient, even of the better class possesses hence, either much time must be spent on cross-examination or many inaccuracies will remain in the dossier

The value of such dossiers assuming that they are carefully and conscientiously filled up, for statistical purposes cannot be denied—Galton demonstrated that in a somewhat different sphere—but in daily work they introduce an amount of superfluous material which hinders practical decision, despite the advantages ably set forth by the author The fact that the author has made more or less successful trial of different models of the questionnaire in 752 cases suggests that this method may suit the Spanish habit of mind

INJECTION TREATMENT OF VARICOSE VEINS

LAST year we commented[1] on Dr. V. Meisen's method of treating varicose veins by injecting a 20–30 per cent sclerosing solution of sodium salicylate Dr Meisen has now published an account of the extension of his experiments[2] His results have continued uniformly good, and he has evolved a modification of technique by which he has succeeded in avoiding severe complications in all but 1 6 per cent. of his patients even in the presence of ulcers and eczema He lays stress on the importance of a most painstaking examination. He objects to the use of the elastic band which he says leads to stasis, and makes the patient stand on a high chair and lift each leg alternately while he observes the state of the veins under working conditions. It is important to look carefully for varices hidden under fat ulcers and other skin lesions He has replaced his original solution by one composed of equal parts 25 per cent sodium salicylate and 10 per cent common salt, which is practically painless when injected The maximum dose is 10 c cm. The point of the cannula must not be too sharp or the vein may be transfixed It is inserted while the patient is standing up, and when blood flows from it it is rotated once or twice to make sure that it has not caught in the opposite wall The patient then lies down, and the surgeon places the leg on a special stand. When the varices are empty, which takes a few minutes the injection is commenced, this should be performed very slowly and stopped if there is any resistance to the flow or if the patient feels pain For injections in the neighbourhood of the malleoli, which are always painful, ½ per cent novocaine (without adrenalin) is given direct into the varix After injection the part is lightly massaged Treatment is repeated every other day, and if both legs are affected one is done every day.

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[1] Ars Medica, April, 1927

[1] THE LANCET 1926 ii 661

[2] Ugeskrift for Laegar, Jan. 20th, 1927

The patients Dr Meisen has treated include 55 with phlebitis, 135 with varicose ulcers of varying duration, and one with venous angioma Forty patients had chronic eczema as a complication Old age offers no counterindication, and the oldest patient treated was 81 All the ulcers were healed at the time of discharge except in two cases, some, however, required a further short course In his previous *communication Dr Meisen already noted the curious* fact that 25 per cent. of his patients had flat feet, he now raises his estimate of the coincidence of flat-foot and varix to 50 per cent Another complication is periostitis of the tibia, which often proves very stubborn Only 3 per cent of his cases had undergone previous operation, and most of these had had recurrences after the Trendelenburg technique, several had had repeated surgical treatment The author's opinion is that operation is useless for this complaint. He has observed that varices appear at very definite points—viz, on the anastomoses between the deep and superficial veins If, as has been believed, they were simply due to weakness of the vessel walls, they would appear haphazard, which actually they do not. This is one reason for the disappointing results of operation, for it is impossible to remove these anastomoses The operation cannot be radical enough The 1 3 per cent of complicated cases included deep sloughs leading to gangrene of muscle, chemical phlebitis, infarction, and hæmorrhage Infarcts are sometimes the result of using too large doses, and occurred in one or two cases for whom an attempt was made to hasten the treatment at their request 25 c cm is regarded as an infarct-producing dose, and 10 c cm is now Dr Meisen's maximum He also hopes to forestall this accident by ligating the vein when this appears advisable The number of bad results has, however, been unusually small for an experimental treatment That the method produces a very firm thrombus is proved by the failure of heavy massage at a Turkish bath to displace it on the day after injection

Dr. Louis Humbert, in a treatise on the same subject,[3] quotes the work of several authorities who have relied on different sclerosing solutions Sicard, whose paper published in 1919 was the pioneer work on this treatment, began by using neutral sodium carbonate, having observed the rapid venous sclerosis caused by salvarsan compounds with their high sodium content This substance, however, proved highly irritating to the subcutaneous cellular tissue and was often responsible for scarring, even when the operation was perfectly performed He now, like *Dr Meisen, prefers sodium salicylate to everything* else, but also uses mercury biniodide, especially for varicose ulcer This compound was first employed by Montpellier and Lacroix but it has the disadvantage of being toxic, and cannot be freely injected into several places at once Génévrier uses a solution of 0 4 g of neutral quinine hydrochlorate and 2 g of urethane in 3 c cm of water, but Dr Humbert considers that quinine should not be given without great care It has been known to cause extensive fibrosis. Sodium citrate he considers inferior to the salicylate, and mercury bichloride, he states, has caused several accidents He recommends a technique very similar to that of Dr Meisen, and describes some leg supports which he has designed and which increase the ease of operation and the comfort of the patient The most brilliant successes, he says, are obtained in cases of obvious varices where there is no lesion of the skin He claims that 98 per cent of ulcers are curable by this method, and that it is the only one with any reasonable chance of success in varicose eczema Injections, however, are counterindicated in the acute stage of deep phlebitis. The classic treatment should be followed by some months of elastic bandaging, and the sclerosing process instituted when the veins are normal The veins will always be hypersensitive, however, and phlebitis can be diagnosed retrospectively by the acute inflammatory reaction, followed by œdema, which is apt to take place when a vein once phlebitic is injected Patients are liable to relapse after an infectious illness, and injury, or any physical adversity, however slight For this class of sufferers small doses and weak concentrations are used at long intervals, the smaller and more sensitive veins are irrigated *gently, and the large trunks left to the last* Adhesive bands are used freely and, in fact, Dr Humbert, stresses their use in all cases more emphatically than Dr Meisen Besides its efficacy, the injection treatment of varicose conditions has the great advantage of allowing the patient to proceed almost unhampered with his work Probably the large majority of varicosities are due to much standing in the pursuit of some humble avocation, and the patient is unable to afford either the cost of an excision or the time during which it will incapacitate him from work The sclerosing operation will prove a great boon to this numerous class if these successes can be substantiated

SHELL-SHOCK AND ITS AFTERMATH.

WITH the passage of almost eight years since the end of the Great War the problem of the shell-shocked soldier still remains with the United States as it does with us The question of the war neuroses has proved to be not merely a medical one, but a social one also Why do the shell-shock cases still remain? Is the war neurosis a specific nervous disorder arising out of very definite conditions? What can society do with those whose power of adaptation seems to have been destroyed beyond repair? These are some of the questions upon which Dr Norman Fenton attempts to throw light in a book recently published[1] The subject *lends itself to statistical inquiry, at least* from the medico-sociological point of view, and it is this method of approach that the author pursues throughout this interesting essay The early chapters concern the military history of Base Hospital 117, which was organised to meet the very special requirements of the shell-shock patients Coming late into the conflict America was able to profit by the experience of other nations, and in consequence the training of large numbers of psychopathologists for work in France and elsewhere was a feature of American medical organisation With this valuable instrument they were to some extent able to screen the army at the recruiting stage of those with psychopathic tendencies, and others who because of feeble mentality may have proved *themselves a nuisance to others*—their colleagues and superiors in the field of military operations

Dr Fenton deals statistically with the relationship between general casualties and shell-shock, and between shell-shock and other disorders incidental to the crowding together in a strange environment of healthy and inexperienced young men—i e, venereal disease, alcoholism, and drug addiction Age, race, geographical origin within the States, and educational standard are all here correlated with the disorder of shell-shock Race investigation, strangely enough, produced very poor data As regards age, a high incidence of war neurosis was found amongst those of middle age There was discovered a demonstrable relationship between the amount of education and the soldier's capacity to withstand the shocks of war, and it was found in the examination of post-war figures that the educated patients tended to drop out and become socially useful, whereas those of limited education or with demonstrably psychopathic taint remained on as clinically sick. The follow-up of the cases was the main aim of the author's study. In this follow-up of a group of psycho-neurotics Dr. Fenton found that the "1924–25 group is of much more use to society now than they were to the army at the time of discharge from hospital." This finding needs more careful statistical analysis. Adaptation to military life was more difficult to the neurotic than adaptation to civilian life. Moreover, education statistics merely indicate a higher social level of achievement and easier power of return to a more receptive environment. The decently educated soldier probably came from an environment much more willing to reabsorb him on his return than would be the case of the poorly educated and his less sympathetic environment. Again, in America the post-war prosperity made it easier for the war-scarred young American to find a place in the community than did conditions in England for our men. Many, it is true, were medically unfit for work, but the criterion of fitness was profoundly influenced by the economic depression and by the movements of population to the big towns during the Great War. In fact, the problem of shell-shock at this stage needs exploration of two fields. First, what are the individual characteristics which make for war neurosis? Secondly, what are the social and economic factors which are at work perpetuating such a condition? Whether the readaptation frequently achieved has been due to the actual healing of psychic scars, or whether society has been able to shut its eyes to them and reabsorb these men, can only be decided by a more careful consideration of the victim as an individual mind and as an economic unit. Dr. Fenton's book is of extreme interest to those who have had to deal with shell-shock cases, and he has brought forward data and methods of correlation which ought to stimulate inquiry in this country where war neurosis and its aftermath remains a problem.

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[3] The Modern Treatment of Varices La Revue Médicale Universelle Paris Pp 93 Fr 25

[1] Shell Shock and Its Aftermath By Norman Fenton, Ph D With an Introduction by Thomas W Salmon, M D London: Henry Kimpton 1926 Pp 126 12s 6d

PHTHISIS IN THE SLATE INDUSTRY.

THE question as to whether inhalation of slate dust is associated with a high death-rate from phthisis has often been raised, but never decided. Now, however, a report[1] has been issued from the Welsh Board of Health which bids fair to settle the matter. Slates are nearly a monopoly of North Wales where they are quarried in the counties of Merioneth and Carnarvon. The men who get the rock in the open terraced quarries are less exposed to dust than the men who split and dress the slate in sheds. When the mortality experienced by these men is considered in relation to their dust exposure, and to that of other men in the small rural district of Gwyrfai, which Dr. T. W. Wade intensively investigated, the influence of the industry is brought to light. All the slate workers, and in particular the dressers and splitters, experience greater mortality from phthisis than other males, and this mortality exhibits the statistical phenomena characteristic of phthisis of silicotic origin, which are that it occurs later in life than usual and is associated with high mortalities from other respiratory diseases. The excessive death-rates are far below what are experienced by some other industries with a silica dust risk, such as tin-miners in Cornwall, and metal grinders in Sheffield, but the exposure to dust in the slate industry appears to be less, as is also the content of silica in the dust. Interesting mineralogical reports are given of the composition of the slate dust; they indicate that some 35 per cent. consists of silica in the form of quartz and that particles from one to five microns in size are plentiful. On the clinical side the case waits to be fully established; post-mortem evidence has not been forthcoming and X ray examinations are yet to be made. Now that the existence of this occupational disease has been suggested by statistical and mineralogical evidence clinical and pathological findings will doubtless follow, and the attention of technical advisers should be directed to eliminating the dust risk from the industry. The report takes cognisance of various other social conditions, such as housing, wages, and geographical location, and is thereby the more thorough; it contains two puzzling tables headed "proportionate mortality," in addition to more comprehensible figures, useful explanatory graphs, and excellent illustrations of the slate industry.

THE PRISON PSYCHOSES

FROM time to time in convict prisons examples are seen of certain morbid mental states which have been described as distinct disease forms under the name of "prison psychoses." These have been the subject of much inquiry, but, on account of the variation in the material which was available and in the conditions under which the studies were made some confusion of thought appears to have arisen as to what may or may not be regarded as belonging to this class of mental disorder, and whether, in fact, the classification is not redundant. In a recent paper,[1] published with the sanction of the Directors of Convict Prisons in England (although it does not necessarily represent their views), Dr. H. T. P. Young defines these states as "special types of mental reactions developing upon conflicts which arise as the result of imprisonment, and possibly from the shock attending the criminal act, trial, and conviction." He is careful to point out that in order that the existence of a separate and distinct disease may be demonstrated, it is essential that all those cases in which the chief external cause cannot be attributed to the effect of prison surroundings should be eliminated. This, in his study, he has endeavoured to do, considering as strictly eligible for inclusion in the group as defined only those persons of whom no history of mental or nervous disease is known apart from their prison records. As the result of his inquiry, Dr. Young finds that there is such a condition as a true "prison psychosis"; that its characteristics are observable both in first offenders and in recidivists; that, as a rule, its development is not rapid, usually a period of 6 to 18 months being required; that the condition appears to form a connecting link between the anxiety neuroses of a traumatic origin on the one hand and systematised delusional insanity on the other, bordering on the former more especially in first offenders who temporarily have lost their capacity to realise the full responsibility for their crimes and on the latter in recidivists whose anti-social feelings are developed more strongly, and whose facility in projecting their guilt appears to be more pronounced.

The material upon which these "Observations" are based consists of male convicts serving terms of penal servitude of three years and upwards, and of habitual criminals undergoing sentences of preventive detention; they belong to many races and to all grades of society, and they vary in intelligence and in educational attainments, while all the more serious forms of crime are represented. Among approximately the 300 convicts who had been placed under special mental observation, there were 19 cases in which these disordered states of a prison type were observed. This number does not include others whose symptoms bore the stamp of their environment, but in whom the disorders themselves varied but little from those to be seen in other situations and under other conditions. Of these 19 cases, five were certified as insane, and the remainder discharged from the prison hospital after periods of observation varying from a few weeks to several months When compared with their equivalents in the general community, they were relatively inferior in physique, in none of these cases were signs of tuberculosis, or a positive Wassermann blood reaction found, septic foci, however, were rarely absent The grosser sequelæ of encephalitis lethargica were not detected, nor was any connexion found in the cases examined between febrile conditions of short duration, such as influenza, and the onset of mental changes Although no biochemical tests were done, the routine physical examination revealed no gross changes in the thyroid gland, but instances of mild hypothyroidism were seen in some of the cases in which chronic infections incurred Apart from those prisoners in whom no psychopathic taint is known to exist, there is at Parkhurst, where this inquiry was conducted, a small group of men, forming about 5 per cent of the population of the prison, who, because of some distinct but uncertifiable mental abnormality, have been brought together from all convict stations for special mental observation and treatment, as well as all those whose mental state has given rise to doubt as to their fitness for ordinary convict conditions

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[1] A Report of an investigation into the alleged high mortality-rate from tuberculosis of the respiratory system among Slate Quarrymen and Slate Workers in the Gwyrfai Rural District. W. T. Wade. Welsh Board of Health. Ministry of Health. Report No. 38. H.M. Stationery Office. 1927.

[1] Observations on the Prison Psychoses. By H. T. P. Young, M.B., Ch.B. Edin., Medical Officer, H.M. Convict Prison, Parkhurst. Reprinted from the Journal of Mental Science, January, 1927.

The observations and conclusions in this paper, therefore, refer to a population which is, in part, especially selected, and do not represent the conditions at other convict prisons This must be borne in mind when comparing this paper with previous writings on this subject In their " History of the Prison Psychoses," Nitsche and Wilmanns ably have summarised the more important of these earlier publications From them we learn that Reich, Moeli, Ganser, and others reported on insanity chiefly among those awaiting trial; that Rudin, Birnbaum, and Bonhoffer relied on observations which they had made after the cases had been received into a clinic; that Kirn's material consisted of short-term petty offenders who had been in solitary confinement, and Gutsch's patients developed disease when undergoing the same punishment; that Sommer inquired into the cases of men who had been transferred from prison to a criminal lunatic asylum, and Delbruck, who was, perhaps, the first of the investigators in this field, was in charge of a prison containing a large proportion of convicts who had been sent there from other institutions because they were not amenable to discipline, a fact which, as Dr Young points out, is suggestive of mental abnormality of some standing Few of these observers, not excepting Siefert, had access like Dr Young to cases of long-sentence prisoners in their own peculiar surroundings and when the disease was in its earliest stages

THE OXFORD OPHTHALMOLOGICAL CONGRESS

THE seventeenth annual meeting of the Oxford Ophthalmological Congress is to be held from Thursday, July 7th, to Saturday, July 9th, and an interesting programme has been arranged The sessions are to be held in the Department of Human Anatomy in the University Museum, and on Thursday, at 10 A M, the opening address will be delivered by the Master, Mr Philip Adams, after which Dr William H Wilmer (ophthalmologist-in-chief to the Johns Hopkins Hospital, Baltimore) will open a discussion on the Results of the Operative Treatment of Glaucoma Amongst those who will take part in this discussion are Prof Felix Lagrange (Bordeaux), Mr T H Bickerton (Liverpool), Mr A L Whitehead (Leeds), Lieut-Colonel H Herbert (Brighton), Mr Malcolm Hepburn (London), Lieut-Colonel R E Wright, I M S, Dr C F Bentzen (Copenhagen), Prof J Szymanski (Wilno), Dr T Harrison Butler (Birmingham), Mr R Davenport (London), Mr J Hern (Egypt), and Dr L Preziosi (Malta) The Doyne memorial lecture will be delivered on July 8th by Prof K K Lundsgaard (Copenhagen), his subject being the Pneumococcus in Connexion with Ophthalmology. At other meetings there will be numerous addresses and communications dealing with research and clinical practice The annual dinner of the Congress will be held on Thursday in the hall of Keble College, where members are offered accommodation A full programme of the arrangements may be had from the hon secretary, Mr Bernard Cridland, whose address is Salisbury House, Chapel Ash, Wolverhampton

A CARNIVOROUS RACE.

IT is generally believed that much renal and circulatory disease is due to impairment of nitrogenous metabolism by a diet too rich in animal protein, and it is therefore interesting to read an account[1] of some research undertaken by Dr William A Thomas on the Eskimos of Northern Labrador and Greenland, who subsist exclusively on fish and meat He derived his information from personal examination of the natives, and from the records and knowledge of the Danish physicians The hospitals of Greenland are excellent, and Dr Thomas had access not only to laboratory facilities but also to statistics covering many years The diet consists of whale, walrus, seal, caribou, musk ox, hare, polar bear sea-birds, and fish—all preferably eaten raw The Eskimo actually eats very little fat, but uses it for fuel, he prefers the red meat and liver, eating the entrails in time of scarcity The results of the inquiry showed no unusual prevalence of either cardiovascular or renal disease The average blood pressure of 142 adults was 129/76, and the highest was only 170/100 In this series albuminuria was found in 12 persons, of whom only three had a systolic pressure of more than 140, the other nine had moderate amounts of serum-albumin Two of the three who had both hypertension and albuminuria had casts in the urine and casts were also found in the urine of two of the remaining six who had hypertension only, and in three of the nine who had albuminuria without hypertension Nephritic œdema was seen in only one subject Of nine persons over 60 years of age only one had any albuminuria These natives lead lives of great physical activity and hardship, and seem to be quite capable of dealing with their high protein diet It is also remarkable that in carnivorous Greenland both scurvy and rickets are unknown Children are suckled until they are 4 or 6 years old and can eat meat In Labrador, however, where civilisation has trained the natives to buy cereals and dried and canned provisions, Dr Thomas notes that scurvy and rickets are universal The abundance of summer sunlight seems to give no effective protection against the latter disease The explanation may be that fish, and fish-eating animals, contain much vitamin C, as well as A, in their tissues Its source is presumably the marine vegetation on which the fish feed Stefansson, the explorer, was the first to propound the theory that a white man could find sufficient animal food in the polar seas to keep him in good health, and he had the courage to stake his life on it It is probable, Dr Thomas thinks, that most healthy white men could quickly adapt themselves to the natural carnivorous diet of the Eskimos, the raw skin of the white whale is an antiscorbutic as efficient as orange juice or banana What he must resist, apparently, is the temptation to eat polar bear's liver, as for some reason this is very poisonous

POST-MORTEM CIRCULATION

DR R Eisenmenger a specialist in physical therapy at Vienna, has succeeded in producing artificial circulation of blood in the human body after death[2] An air-pump[3] placed over the abdomen produces positive and negative pressures of 40 to 60 mm of mercury, these pressures alternating at the usual rate of the respiratory rhythm Positive pressure drives a certain amount of blood into the heart, where it is retained by the valves while negative pressure is refilling the abdominal veins and when this action is repeated the heart is overfilled and blood is driven on through the lungs The fact of circulation is proved by inserting a cannula into the proximal end of the divided median basilic vein, through which it is found a litre of salt solution at a pressure of one metre of water will enter the circulation within half an hour In the case of a woman of 40, who fell into the street from the third floor and was brought in dead, Dr Eisenmenger's apparatus was applied four hours after death, and during the half hour required for the litre of salt solution to enter the vein, the previously blanched face became cyanotic, blood began to ooze out of the distal end of the cut vein and from the site of a compound fracture, and the jugular veins showed definite oscillation in fullness Dr Eisenmenger recalls the observation of Prof Jellinek, of Vienna, that by the Sylvester method of artificial respiration a difference of pressure is produced between artery and vein in the cadaver, though this difference is too small to overcome the resistance in the capillaries He has no doubt that by his own method complete circulation is obtained and that blood penetrates the coronary vessels and those supplying the respiratory centre By this means, he considers, the heart may be mechanically stimulated without any dangerous incision in the abdominal wall, and therapeutic substances can be brought into the circulation by transfusion Dr Eisenmenger hopes that his observations will bring new interest into the study of attempts to restore life in the apparently dead

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[1] Jour Amer Med Assoc May 14th 1927
[2] Wiener klinische Wochenschrift 1927, No 23, p 755
[3] Ibid, 1924, No 15

FROM July 25th to 28th the Section of Neurology of the Royal Society of Medicine is to hold a combined meeting in London with the American Neurological Association On Monday, July 25th, at 9 P M, there will be a reception at the House of the Society and the following day will be devoted to short papers On Wednesday a discussion on the Cerebellum will be introduced by Dr F Tilney, Dr H A Riley, Dr L J Pollock, Dr L E Davis, Dr A J Mussen, Dr T H Weisenburg, and Dr Harvey Cushing On Thursday the subject of discussion will be Sensory Disorders in Organic Disease of the Nervous System, the first speakers being Prof J S B Stopford, Dr Wilfred Harris, Dr Gordon Holmes, and Dr Kinnier Wilson At 5 P M on the same day Dr Charles L Dana will deliver the Hughlings Jackson Lecture, and in the evening there will be a banquet Fellows who wish to read papers or show cases at the meetings are invited to communicate with Dr W J Adie, secretary of the Section of Neurology

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CONFERENCE ON MATERNITY AND INFANT WELFARE

A conference is to be held, under the auspices of the Central Council for Infant and Child Welfare, in the Great Hall of the British Medical Association, Tavistock-square, London, W C, from Tuesday, July 5th, to Friday, the 8th Amongst the societies and organisations to be represented will be the Maternity and Child Welfare Group of the Society of Medical Officers of Health, and members of the medical profession, outside the society, will be welcome to attend its meetings and to express opinions On Thursday, July 7th, at 10 30 A M, the subject of discussion will be the Workings of the Maternity and Child Welfare Act, 1918, and some Indications for its Future Development Lieut -Colonel F E Fremantle will give a general survey of the position, Dr J A Stephen will speak on the Provision of Observation Wards and Hospital Beds for Infants and Children under School Age, and Mr Harry Evers will deal with the Provision of Further Beds for Maternity Cases The afternoon session on the same day will be devoted to Respiratory Disease as a Factor in Infantile Mortality, and Measures Necessary for its Nursing and Treatment, Dr A S M MacGregor, Dr H H Chodak Gregory, and Dr Kerr Simpson will take part in the discussion The full programme of the Conference, in which a large number of medical questions are down for discussion, may be had from the Secretary of the Central Council at 117, Piccadilly, London, W 1 A number of social functions have been arranged, and railway facilities are offered to members

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Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CCXXIX

THE TREATMENT OF URTICARIA

WHEN confronted with an urticarial rash it is essential to realise that urticaria is not a disease sui generis, but is merely a symptom, that it may be produced by a variety of causes, and, furthermore, that there is no specific remedy Therefore, if successful treatment is to be anticipated, a detailed history must be elicited and a thorough physical examination of the patient undertaken It is often too readily assumed that urticaria is the outward manifestation of a food poisoning, and that some rather unusual article of diet taken within a short interval of the attack is responsible for the condition Certainly no one will deny that food proteins do in a large number of cases cause the rash, but experience has taught us that in many incidences this is not so, and that the ætiology is more complex.

The Acute Attack

As is well known, this is often accompanied by more or less severe constitutional symptoms such as vomiting, diarrhœa, and a general feeling of malaise The rash is usually profuse and sometimes even bullous It may involve the mucous membrane of the lips, tongue, or glottis Fortunately the latter complication is extremely rare, but cases have been recorded in which tracheotomy has been necessary Such attacks undoubtedly do frequently follow the ingestion of some article of diet to which the patient is sensitised It is only necessary to mention some of the more common of these—i e, shell-fish, tinned meat, or fish in which putrefactive changes have occurred Should the patient be seen during the early stages and the severity of the symptoms warrant it, an emetic should be administered In all cases it is advisable to give a dose of calomel, followed by a saline aperient Prompt relief from the irritation and burning of the distressing rash may be obtained by the subcutaneous injection of 5–10 minims of 1 in 1000 adrenalin chloride During the first 24 hours it is desirable that water only should be given by the mouth Recovery ensues in a day or two and the patient may eventually be able to resume the ingestion of the offending article of diet, in other cases the unfortunate individual may have a recurrence, not only when the particular protein is taken, but he may have become sensitised to other proteins and pass into

The Chronic Stage

This is by no means always preceded by an acute attack The onset may be insidious, the wheals recurring at regular or irregular intervals It is this chronic stage of urticaria which exercises the skill and patience of the physician, for the duration may be measured in terms of weeks, months, or even years, and may be due to an embarrassing number of causes Irrespective of the cause, the lesions may be small and circular, closely resembling the wheal produced by the nettle sting, or large and irregular Some may be bullous, resembling those of pemphigus, or the œdema of a limb or other part may be so pronounced as to earn the distinctive name of angioneurotic œdema Whatsoever be the form or duration of the lesion, its cause is only likely to be ascertained if the examination be conducted in a systematic manner.

External causes —It is hardly necessary to state that the bites of certain insects may cause urticarial wheals, but it may not be generally known that an infection with scabies is sometimes responsible I can recall a case in which wheals had recurred obstinately for many weeks before the presence of this parasite was revealed It is interesting to note that few excoriations are as a rule found on a patient suffering from urticaria Sudden changes of temperature in a susceptible person will bring about the quick onset of the rash , both hot and cold baths have been known to produce it Certain articles of clothing may be the exciting cause, as may be also contact with various plants and chemical irritants When the offending agent has been detected and removed no further treatment is needed

Internal causes —Such varied examples as blood diseases, diseases of the female generative organs, boils, rupture of a hydatid cyst, have been quoted as occurring concomitantly with an urticarial rash Infrequent as such causes may be, they serve to emphasise the fact that urticaria should be regarded as a symptom and not as a disease

Recently many apparently authentic cases have been published in which there has been cessation of the rash subsequent to removal of some septic focus The presence of intestinal parasites may account for recurring attacks, and some subjects have such a predisposition to this reaction of the skin that emotion and other psychical disturbance may be followed by wheals An example of this was recently described in a continental journal[1], a woman complained that contact with silk, but with no other material, caused the rash to appear at the site of contact A test apparently verified her statement, yet when cotton material was substituted for silk, without her knowledge, the rash still appeared

Food Proteins

There remains for discussion what is probably the principal rôle in the production of urticaria—namely, absorption from the digestive tract To enumerate the various food proteins which have been known to cause urticaria is outside the scope of this article ; the best plan is to suspect all The protein sensitisation tests introduced during the last few years have not given the assistance that was anticipated from them Patients will often be found who give a positive reaction to one or more of these protein extracts, yet when the particular food is omitted the rash continues The tests appear to show that the patient is hypersensitised but do not necessarily indicate which particular food he should avoid A more serviceable method is one for which I believe we are indebted to Sir Norman Walker This is as follows The patient is instructed to keep a daily ledger On the left hand page a detailed account of the meals and events of the day is written, whilst on the opposite page the time and the appearance of the rash is noted First one common article of diet is omitted for several days and then another until all in turn have been excluded If this plan is conscientiously carried out valuable information is obtained, and the noxious substance may possibly be ascertained It is advisable to impress upon the patient that if, for instance, he is to omit eggs, he must avoid cake or pudding which contains egg albumin or yoke, however small the quantity A more rapid method of excluding food protein as a possible cause is to confine the patient to bed for three days and allow milk diet only If the rash, in spite of the restriction, continues, rice water should be substituted for milk The method is rigorous, but a patient suffering from a severe recurrent urticaria can well afford to put up with discomfort if the ordeal gives promise of relief

In the fortunate event of the noxious substance being detected, the remedy is obvious ; however, it may be very inconvenient to omit from the dietary common articles, such as milk or eggs In such instances desensitisation may be attempted

Desensitisation may be accomplished in one or two ways Commencing with a minute dose, in the case of milk a few drops, the amount is increased daily if tolerance is maintained , the second method is to bring about anti-anaphylaxis by giving a small quantity of the particular food one hour before the meal containing it is taken Should attempts to ascertain the ætiology fail, as unfortunately is too frequently the case and the rash persist, then more or less empirical remedies have to be relied upon

Empirical Remedies

Calcium salts have had a long innings, but in my experience the results have been singularly disappointing, so have also the somewhat older remedies ichthyol and quinine Aspirin will sometimes give temporary relief On the assumption that urticaria is a manifestation of the anaphylactic state, peptone has been recently advocated by French dermatologists. The dose recommended is 0 5 g taken one hour before each meal Since urticaria has been noted in cases of hypothyroidism, thyroid extract has been lately prescribed as a remedy , one author, indeed, goes so far as to proclaim it a specific In two recent cases, a young girl and a middle-aged woman, in which I have tried it, there has certainly been a gradual and lasting improvement Auto-hæmotherapy is worthy of a trial should other methods fail , 10 c cm of blood is withdrawn from a vein and rapidly injected intramuscularly with the usual precautions into the buttock. This is repeated twice weekly

Of *local applications* for the relief of the itching, lotions are preferable Of these the usual lotio calaminæ with the addition of a small quantity of liq plumbi subacet or carbolic acid is useful, but many patients find the domestic remedies of vinegar or lemon juice the most efficacious At night the chosen remedy should be placed in a shallow dish by the bedside so that it may easily be applied if necessary.

Lichen Urticatus

Urticaria in the true sense of the word is not frequently encountered in children There is, however, a relatively common disease known as papular urticaria or lichen urticatus, which is probably closely related to urticaria It is distinguished by the appearance of a minute papule which appears in the centre of a small wheal of varying shape and size. The complaint causes very great distress to both the child and its unfortunate parents, for it is intensely irritating and may be accompanied by a secondary impetiginous infection It is more prevalent during the summer months than during the colder months The ætiology is obscure and the treatment unsatisfactory I have noted the curious phenomenon that the sufferers recover immediately they are admitted to hospital even although no treatment of any kind be given , the rash returns after their discharge. Based on this experience numerous experiments on the influence of various diets have been made, but the cause of the disease remains a mystery. The experiments referred to pointed to heat being the most active exciting cause The parents should therefore be warned against allowing the child to be over-clothed, particularly at night For the same reason the child should neither be undressed in front of a fire nor placed in a hot room It is customary to restrain children suffering from some skin diseases by splints or bands In this disease this would seem to be unnecessary cruelty, for scratching appears to afford relief to the sufferer and does not prolong the course of the disease

Removal to another house may be tried if feasible, for prompt recovery often follows A Nottingham patient, seen by the writer, only had the complaint when staying with his grandparents in Sheffield, whilst another boy was quite free when away at school at Worksop, yet always had the rash on returning to his home in Sheffield In my experience no internal remedy is of any real value The following have their adherents *calcium lactate, vinum antimoniale* and, recently, peptone, one hour before meals The child should be carefully examined for foci of infection and particularly for the presence of threadworms Locally the following application will be found serviceable —

Liq carbonis deterg	30
Pulv amyli Talci	āā 40
Glycerini	20
Liq plumbi subacet	4
Aquæ	200

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[1] Dufke, F Dermatologische Wochenschrift, No 21, 1926

Special Articles.

RELATIONSHIP OF PHYSIOLOGY TO MEDICINE AND SURGERY.

An Address to Members of the Inter-State Post-Graduate Assembly of North America, delivered at Edinburgh on June 6th 1927,

By Sir EDWARD SHARPEY-SCHAFER, F.R.S.,
PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF EDINBURGH

Physiology forms the basis of Medicine and Surgery. Until lately it was known in this University as the Institutes of Medicine which, being interpreted means the Foundations of Medicine; the term is still used in Trinity College, Dublin.

Literally physiology means the science of nature, but is now restricted to mean *living* nature. It is therefore the science of life, also known as biology. Animal physiology is the science of animal life, human physiology that of human life. Physiology must be studied in living organisms or in living—i.e., surviving—parts of the organism, such as separated organs, or tissues, or isolated cells. As with every other branch of science it can only progress by experiment and, since it deals with life, experiments can only be made on the living subject. Some experiments can be and are made on man. Every patient must always be the subject of experiment and in that sense every doctor has the opportunity of advancing the knowledge of physiology. We shall, in fact, see that physiology owes much to the observations and experiments of clinicians. But most experiments in physiology cannot be carried out on the human subject; they must be performed on the lower animals, and the results—so far as possible—transferred to man. Hence the necessity for "vivisection." Vivisection is performed every day by the operating surgeon upon his human patients, but only arouses indignation amongst unreasoning people when it is performed upon animals for the benefit of humanity. Only those who are callous to human suffering can reasonably contend that experiments upon living animals should be put a stop to because it *may* involve the infliction of pain upon them. It involves no more pain than operations upon man—usually none at all—since the animal under operation, like a subject under surgical operation, is kept anæsthetised during the whole time. An animal is generally killed while still anæsthetised. Even if the experiment requires that it should be kept alive for the subsequent result of the operation to be observed, it will suffer no more than the surgical patient recovering from an operation—indeed, in most cases far less. Operation on or inoculation of the lower animals is the only way we have of extending our knowledge of medicine and surgery in man; unless we are to make our experiments upon man himself, which few would, I think, contend to be justifiable, even if, as would indeed be the case there were men and women brave enough to offer themselves as the subjects of experiment. In the investigation of diseases which are peculiar to man it is sometimes necessary that inoculation should be carried out on man, and there have never been lacking doctors who are willing to take the risk of serious illness or even death in order that the ætiology of such affections should be cleared up. Self-sacrifice of this kind is as heroic as that of the battlefield and is no less deserving of recognition, although it rarely, if ever, receives it.

Ancillary Sciences

For the study of physiology a prior knowledge of three other sciences is essential. These are physics, chemistry, and anatomy. The application of physics to physiology or biology is termed biophysics; that of chemistry, biochemistry. The one deals with the physical changes associated with the functions of the living body, the other with the chemical changes. But we cannot understand the working of a machine without a knowledge of its structure, and this is where anatomy comes in. Further since the functions of the body are actually performed by the living cells and tissues composing it, the microscope becomes an essential instrument to the physiologist, who needs to observe both the microscopic structure of the living cell and the changes it undergoes as a result of activity. On this account histology or microscopic anatomy has in this country always been taught along with physiology, although it has been the custom in Germany and America to associate it rather with the teaching of anatomy. But since no problem in physiology can be considered completely solved until it is brought down to the bed-rock of the changes occurring in the living cell, the importance of the microscope as an adjunct to physiological methods becomes apparent. This is beginning to be recognised in the United States, witness the microdissection methods of Chambers of New York, the observations on renal activity of Richards of Philadelphia and the interesting results obtained with surviving tissues by Harrison of Yale, and by Carrel of New York. The physiologist who neglects the use of the microscope eventually finds himself in a blind alley beyond which he can make no further progress.

If it is true of physiology that the microscope is an essential instrument of investigation it is still more evident for the daughter sciences of pathology and bacteriology in which all the methods of physiology are employed and for both of which the microscope is a first necessity. And since at the present day the progress of medicine hinges on those two "ologies" it is scarcely too much to aver that the microscope is the most important instrument for advancing our knowledge of medical science. No one understood this better than the great Lister, who expressly tells us how invaluable for his later researches he found the early training in the use of the microscope which he obtained from his father, to whom, as is well known, we owe the modern form of this instrument.

Rational Medicine and Surgery

In considering the relations of physiology to medicine we must recognise and accentuate the fact that medicine is no longer an art, but has developed into a science. That a good deal of empiricism remains attached to its practice is inevitable by reason of our ignorance of the causation and exact course of many affections; until these are known there can be no rational treatment of them. But all patients look for treatment of some sort, whether rational or not; they naturally expect you to do something for them if only because that is what they pay you for. Your own experience or that of your teachers may have shown that, whatever the reason for it, a particular line of treatment or the administration of a particular drug will alleviate the symptoms of a disease regarding which you know of no rational remedy, and you therefore employ that line of treatment, although you may be well aware that it is purely empirical. Regarding this we must bear in mind that empirical methods which have been constantly employed in past days (such for example as those referred to in the libellous epigram on Lettsom, "I physicks, bleeds and sweats 'em") are now abandoned as useless or harmful. But these abandoned methods were in their day recognised as efficient by the whole profession of medicine. We must therefore remember that such empirical methods as may be in fashion in our own time are liable to meet with a similar fate. Only if there is a scientific reason for any course of treatment can you justly repose confidence in it. A great advance has been made in the administration of drugs the action of which is much better understood than was formerly the case, so that their empirical use is being gradually relinquished. Even the laity is beginning to ask the reason for administering this or that medicine. And the great drug-manufacturing companies now not only have chemical but also physiological laboratories belonging to them in order that the medicaments they produce may be tested *and standardised by their action upon animals before* being sent out for the use of the profession.

Many cases, as we know, require not only a careful physical examination of the body, but in addition the chemical and microscopical examination of the urine, and in certain instances of the blood as well. It was no doubt a simpler proceeding to determine the nature of the disease merely by visual inspection, which need not have embraced the patient himself, but may have merely consisted of an inspection of his urine. You will remember how Falstaff sends his page to the doctor with a sample of urine in order that it may be "cast."

> *Falstaff.* Sirrah, you giant, what says the doctor to my water?
>
> *Page.* He said, sir, the water itself was a good healthy water, but for the party that owed it, he might have more diseases than he knew for.
>
> *King Henry IV., Act I, Scene II.*

At any rate the patient had no doubt as to the doctor's ability to effect both a diagnosis and a prognosis in this manner. But I do not think that the method would satisfy even the most confiding patient of the present day.

If Medicine now takes rank as a science, this is even more true regarding Surgery. Not that the *art* of Surgery will ever disappear, for after all is said about its scientific aspect the work of the surgeon will always be a form of handicraft, and in every handicraft there must be individual differences. Nevertheless no surgical operation can be undertaken without a knowledge of certain sciences. These deal respectively with (1) the structures to be encountered (anatomy), (2) the probable effects of the operation, immediate and remote (physiology), (3) the nature of the disease or injury (pathology), (4) the risk of contamination with micro-organisms (bacteriology); and (5) the *administration* of the anæsthetic and the after-treatment of the case, whether by drugs or *otherwise* (pharmacology and therapeutics). Of all these the surgeon must possess an adequate knowledge.

Beginning of Physiology.

The dependence of Medicine upon Physiology is evidenced by the fact that all forms of treatment were purely empirical before a correct conception of physiology was introduced—i.e., before the study of physiology, in the modern sense of the word, had really begun. This beginning dates from almost exactly 300 years ago. Harvey had been teaching his doctrine of the circulation of the blood for several years in lectures to the Royal College of Physicians of London, but he did not give it to the world until 1628 when his immortal work on the heart and circulation was published. This book—the original edition is rare, the University of Edinburgh is fortunate enough to possess a copy—must be regarded as indicating the beginning of physiology as we understand the term. For until the action of the heart and the course of the blood was comprehended no clear notion regarding the functions of any part of the body could be had; everything was guess-work. The famous epitaph composed by Pope on Newton,

Nature and Nature's laws lay hid in night
God said, "Let Newton be" and all was light,

might equally well apply to Harvey so far as the living body is concerned. Until his time medicine was groping about in complete darkness, but as soon as his doctrine was enunciated light was *at once* thrown on the functions of the body and the foundation of physiology was laid. Although the evidences he adduced appear to us convincing, his doctrine was by no means at once universally accepted. So difficult is it for men to disabuse their minds of ideas which have long persisted and with which in their education they have become thoroughly imbued however decisively these ideas may have been shown to be erroneous! Nevertheless the foundation of scientific medicine was being *laid* at the same time, although many did not acknowledge it. It was indeed long ere the empiricism which characterised medicine was abandoned, nor, as we have seen, is it yet wholly given up. But with the growth and development of physiology and its daughter sciences medicine has become gradually built up into the imposing edifice of which to-day it is constituted.

It is not with one aspect only of physiology that the medical man of to-day is interested. For only an increased knowledge of the function of each several organ renders advance possible in the treatment of diseases of that organ. This is well illustrated by the work of Bernard on secreting glands, of Ferrier and others on the functions of the brain, of Pavlov on the digestive organs, and by more recent discoveries regarding the influence of internal secretions on many functions of the body. Perhaps the most striking illustration of the direct application of physiological research to medicine is to be found in the recent discovery of insulin, which has enabled the life of the diabetic to be prolonged to the normal limit and has restored him not only to health but to a condition of usefulness and freedom from anxiety which was impossible to be achieved by dietetic treatment alone.

Training of Medical Men.

Apart from the effect the advances in physiology have had in promoting corresponding advances in medicine, work in physiology affords the best possible training for the practising physician or surgeon. Many instances might be adduced of the effects of such training upon individual physicians *both* in the past and in the present. As regards surgeons it has been customary to assume that what they chiefly require is an accurate knowledge of anatomy, although I well remember one of my own teachers—an eminent surgeon but of the slap-dash kind—whose favourite advice to the student was "Don't let your anatomy spoil your surgery." I hope we most of us *allowed the advice to pass unheeded*; but the idea that only a precise knowledge of anatomy is *required by the surgeon was long prevalent and* is, if possible, even more unsound. For it must be remembered that every surgical case is always in the first instance a medical case, and requires for diagnosis and treatment all the methods of the physician as well as the special methods of surgery. These methods are based on those of physiology, it therefore follows that a training in physiology is as important for the surgeon as for the physician. The effect of such training on the development of their science is well illustrated by the career of many surgeons of the present day. But by far the most eminent example is the case of Joseph Lister. Although it is not very generally known Lister's training was mainly physiological, and all his early work was of a purely physiological character. If he had not developed into the greatest surgeon of all time, he would have become a great physiologist. His physiological work is characterised by an extraordinary accuracy of observation and ingenuity of method, and it was the experience he *gained* in his physiological researches which enabled him to carry to the triumphal termination we know the investigations which led to the discovery of the principles of antisepsis, on which, in its more modern form of asepsis, the whole practice of modern surgery is based.

The Reciprocal Obligation.

I have said perhaps enough to indicate the obligations of medicine and surgery to physiology. It would be possible to expatiate on this theme to any extent, but I wish to deal very briefly with another aspect of the subject of this address, and that is the obligations of physiology to medicine and surgery. In this I shall restrict myself to examples drawn from the internally secreting organs partly because to do anything else would occupy far too much time, partly because it is the subject with which I am personally most familiar.

In the first place then, I would remind you that the discovery that the suprarenal capsules (adrenals) possess any function at all was due to the clinical observations of Dr. Addison, of Guy's Hospital, London, who, I may remark in passing, received his medical training in Edinburgh, but, like many another Scot, migrated south and stayed there. Addison in 1855, described the affection which bears his name, and showed it to be invariably accompanied by destructive disease of the suprarenal capsules, and to be as invariably fatal. This announcement led to a number of experiments on animals to determine whether the ablation of these organs was equally fatal in them. The question was answered in the affirmative by Brown-Sequard, and his verdict is now generally accepted. The attention of the physiologist having been thus directed to the suprarenal capsules they have ever since remained objects of interest not only to him but also to the physician. If you look through any file of physiological literature you will find that relating to the suprarenal capsules to occupy a bulk entirely disproportionate to the size of these small and apparently insignificant structures.

As a second example I will take the discovery of the functions of the thyroid and parathyroids. It was noticed about the year 1883 by certain Swiss surgeons (Theodor Kocher and J. L. and A. Reverdin) that after surgical removal of the tumour formed by the enlarged thyroid in cases of endemic goitre the patients became apathetic, their mental processes were dulled, and in the worst cases they lapsed into a condition indistinguishable from idiocy. This condition was accompanied by a peculiar œdematous affection of the integument and by other physical signs which I need not further specify. Some of the operated cases also exhibited the symptoms of the affection known as tetany. This was also at first ascribed to the loss of the thyroid, but is now known—thanks to the physiological work of Gley—to be due to the inclusion of the parathyroids in the extirpation. Some time before—namely, in 1874—the clinical observations of Sir William Gull in London showed the existence of a syndrome characterised by atrophy of the thyroid and having the same symptoms as were later shown to be caused by surgical removal of that organ: to this disease the name *myxœdema* was given by Ord. Subsequently it was found that grafting portions of thyroid after extirpation of the whole gland would prevent the characteristic myxœdematous symptoms, and still later that subcutaneous injection of thyroid juice or extract (Murray) or even administration of thyroid by the mouth would entirely combat the effects of thyroid removal or atrophy in man.

These clinical observations led—like those of Addison on the suprarenals—to physiological experiments upon animals. The experiments showed that loss of the thyroid is in most cases at all ages (in young animals always), productive of a condition of depressed mentality—so far as it is possible to determine this in animals—similar to that which occurs in man, as well as most of the other physical symptoms which had been described clinically. It was further found that the condition could be entirely obviated by grafting portions of thyroid and by subcutaneous or oral administration of the gland or its juice. And it has recently been shown (Collip) that parathyroid extract is effective in combating the symptoms of tetany caused by removal of parathyroids. Thus all the physiological work on the thyroid and parathyroids had its origin in clinical observations.

My third illustration is derived from the pituitary body. About 40 years ago the eminent Paris physician, Pierre Marie, gave a description of a peculiar syndrome characterised by the appearance of greatly enlarged extremities—hands, feet, and face (although the hypertrophy which causes this enlargement affects the whole osseous and connective tissue structure of the body). To this affection he gave the name acromegaly, and showed that it is always associated with tumours of the pituitary body. Those tumours he supposed to be destructive, and to test this hypothesis physiologists set to work to destroy the pituitary in animals in the expectation that they might show a similar syndrome. But they found that the effect was exactly the opposite; if the destruction were effected in a growing animal it ceased to grow. Evidently, then, "the boot was on the other leg", the tumour was not a destructive one but an adenoma—i.e., an enlargement of the gland itself. And this supposition is corroborated by the observation that "giants" are subjects who, during the process of growth, have undergone enlargement of the pituitary body—at least of its anterior part; this enlargement has produced the same effects as those seen in acromegaly, with the addition that the long bones have grown in length owing to the fact that the enlargement of the pituitary has occurred before the diaphysis and epiphysis of these bones had undergone ankylosis. Since Marie's observation the attention of physiologists has been directed to this minute organ, the functions of which were until then unknown. And although much remains to be elucidated a great deal has been discovered respecting these functions not only in connexion with growth but—as regards its posterior lobe—with the activity of involuntary muscle (especially of the heart, blood-vessels, and uterus), with the functions of the kidney, and with those of many other organs of the body. Indeed, the literature of the present day relating to the pituitary body is probably greater in amount than that relating to any other subject, not even excepting the thyroid and the suprarenals.

Advance of Knowledge

The obligations of physiology to surgery cannot be evidenced by mere illustrations such as those I have given for Medicine. The progress of Physiology at the present day goes hand in hand with the progress of Surgery; they are mutually interdependent. The physiologist employs in his experiments all the methods of modern surgery and, as surgical technique improves, each improvement is adopted by the physiologist. And in advancing his subject the experimental surgeon becomes a physiologist and advances physiology at the same time. No sharp line of demarcation can be drawn between the two subjects; nor, indeed, between any of the branches of science associated with medicine. In one direction Physiology borders on Pathology; in another on Pharmacology; in another on Chemistry; in another on Physics; in another on General Biology, both of animals and plants. It is indeed a mere axiom that no branch of science can be properly dealt with unless its relation to others is taken into account, and to none does this more directly apply than to the mutual relationship of Physiology and Medicine.

BUCHAREST.

(FROM OUR OWN CORRESPONDENT.)

War on Mosquitoes

ACCORDING to a report recently issued by the Ministry of Health, malaria is claiming a considerable number of lives because the protective organisation is inadequate. The yearly average of deaths caused by the disease is nearly 5000 and about 100 000 persons are infected. They are mostly of the working-classes, and especially agricultural labourers, who are not protected at all, whereas industrial workmen, being under the control of the sickness insurance offices, come up from time to time for medical supervision. According to Dr. Banu, Secretary of the Ministry of Health, the greatest obstacle to efficient prophylaxis is the lack of physicians in the counties most infested with malaria. This grievance is to be remedied by offering good salaries to young doctors willing to settle in these districts. A central bureau will be established in Bucharest, and here the various problems will be thoroughly studied. In every county in the infested district a laboratory is to be established, adequately equipped and with a competent medical staff Here the blood of all the people in the neighbourhood will be examined As a remedy quinine will be administered, in the form of blue tablets, which will be distributed free to all who need them To help in the destruction of mosquitoes the Ministry proposes to stock the breeding-places with certain kinds of fish which, it is said, are able to destroy the larvæ and eggs. Extensive experiments have been made with these fish in America, Italy, and Jugoslavia, with satisfactory results The fish, though very small, are extraordinarily voracious, and each of them is capable of destroying about 1000 larvæ a day Dr Mezinescu, director of the State Institute of Hygiene, has brought a great quantity of the fish from Jugoslavia and is going to breed them in his laboratory. When he has a sufficient number at his disposal he will distribute them in the Danube swamps

How to Deal with a Typhoid Epidemic.

In some remote regions of the Near East there are still great masses of people who refuse to recognise the advantages of hygiene and continue to prefer superstitions to sanitation The inhabitants of Huszt, a small rural town in Russinsko, recently revived an old method of driving away typhoid The situation in the town was threatening, inasmuch as within two weeks eight patients had died of the disease, and there were about 40 others ill with it The epidemic naturally caused great consternation among the people, and they feared lest it should spread and carry off the principal townsmen In this extremity they recalled an old Jewish tradition—the town is mainly inhabited by Jews—according to which, in case of raging epidemic, a particular form of wedding ceremony has to be held in a cemetery The triumph of life, it is said, banishes the danger of death. The Jewish community yielded to the representations made and held the ceremony as required, the bride was a servant girl of 17 and the bridegroom a labourer of 26 Some 4000 spectators attended The rabbi walked three times round the cemetery with the couple declaiming a special prayer According to tradition only married men and women were allowed within the fences, the rest of the spectators having to remain outside

Advertising by Medical Men.

In recent years public health and sanitation have undergone very radical changes in Rumania The establishment of the Ministry of Health in 1924 opened a new era for the health of the countryside, which in former times was much neglected as regards the supply of doctors, hospitals, and dispensaries A reminder of these times is the unethical custom—which still prevails, though sporadically—of open advertisement by doctors in the daily papers In most of these may be found small announcements to the effect that X, who graduated at Paris, is a specialist in internal diseases and syphilis, or that Y is a graduate of Vienna University and a specialist in children's diseases So far the Rumanian Medical Association, which is very busy with the organisation of its provincial branches, has been unable to deal with this abuse, but one of its main objects is to fight against it

Not long ago a certain physician complained to the editor of a medical monthly that he had been fined by the local health magistrate, under the Health Act, for having advertised himself in a manner prejudicial to the medical profession Of course the editor, instead of taking his side, exposed his case (without giving away the name) in a leading article, and condemned him for expecting protection after so reprehensible an offence Furthermore, he called upon the health magistrates to study the advertisement pages of the newspapers and fine all medical advertisers according to their demerits Only this, it is considered, can stop the kind of advertisement which is still seen One doctor refers to himself as superspecialist; another promises the "radical and definitive cure of epilepsy," and even offers to make a contract authorised by the courts guaranteeing absolute cure to his patients Still more interesting is the advertisement of another medical man who "is in a position to cure acute and chronic diseases and to cure syphilis with three injections, radically"; whilst another provincial doctor has distributed leaflets from the air, promising cure for every conceivable disease and embellished by his photograph A new Bill is shortly to come before the Legislature, containing the following paragraph "Physicians, dentists, veterinary surgeons, pharmacists, and midwives are strictly forbidden to advertise in non-professional papers, this being contrary to the dignity of their profession It is forbidden to insert in newspapers, or on posters, or in leaflets, &c, statements intended to cause in the minds of sick people the belief that the advertiser is possessed of certain secret remedies which are capable of curing chronic diseases, which at present are regarded by medical sciences as incurable" When this Bill becomes law the lay journals will lose a large contingent of their regular advertisers, whilst the medical profession will gain very much in prestige and dignity

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

Mince-meat

Mince-meat is one the staple forms of flesh consumed in Scotland, where it is more popular than in the South, and its use is as well understood as that of oatmeal used to be Under the Food Preservatives Regulations mince-meat must no longer contain any preservative In England this rule is absolute, in Scotland an exception is made for the months of June, July, August, and September, when the mince may be treated with sulphur dioxide to the extent of 450 parts per million Early in June a case was raised by the local authority of Clydebank against five butchers who were charged with contravention of the regulation The charge was abandoned on technical grounds, so no decision was reached, but it is interesting to note that the butchers still contend that this popular form of meat cannot be provided commercially without some form of preservative Before framing the regulations both the Ministry of Health and the Scottish Board of Health heard deputations on the matter and, as I have said, in Scotland an exception was made for the hotter months of the year It is too early yet to know what the experience has been where preservatives have been dropped In any butcher's shop in Scotland one may see the unnaturally bright colour of mince, as against the normal brown colour of wholesome meat of the same age The process of mincing, of course, results in the exposure of a vastly greater surface to bacterial invasion, and if conditions are not strictly aseptic the meat tends more readily to "go wrong" The remedy, surely, is not to arrest incipient putrefaction by preservatives, but to make the process of mincing and conservation more aseptic There is here a case for the extension of refrigerating methods

Students' Hostels

The University of Edinburgh has received another gift from Mr Thomas Cowan, the Leith shipowner. He had already given £30,000 and has now given another £30,000 to help in providing a residential hall for students to be called Cowan House The second gift is meant to help towards endowment Edinburgh has many women's hostels, particularly those at Liberton, where teachers in training are housed. They have been much visited and are run with conspicuous success But recently there has been a strong move towards providing hostels for men, and Mr. Cowan's handsome gift will be of great assistance

A Tuberculous Cow

It is satisfactory to find that the Diseases of Animals Act is being more rigidly enforced A farmer was fined £10 at a Stirling court for failing to give notification that a cow in his possession was suffering from tuberculous emaciation The butcher who sent the cow to a Stirling live-stock market was also charged and was fined £2 It is reported that he "only saw the cow once in the dark with the aid of a lantern" The Board of Agriculture Order is operating well and a large number of tuberculous cows are passing out of circulation, but before this Order can produce its full effect the negligent buyer needs to be taught an occasional lesson

David Livingstone

Many years ago I visited Blantyre, which used to contain some of the worst housing-groups in Scotland At that time it was proposed to remove the row containing the house where Livingstone was born All Scotland—at home and abroad—is awakening to the proposal that the house should be preserved as the birthplace of an Imperial pioneer It is perfectly possible to wipe out these rural slums without sacrificing that historic room and the success of the appeal has made this possible The Lanarkshire Education Authority, not without some grumbling, has decided that it was proper for the committee to approach the school-children through the schools for personal contributions to the memorial

Cruelty to Children

It is lamentable to read the reports of the local branches of the Royal Scottish Society for the Prevention of Cruelty to Children Year after year they produce a tale of cases dealt with that horrify the imagination with the amount of misery and social maladjustment revealed The Leith branch, for example reported that for 1926 209 cases (the population of Leith for this purpose is about 80 000) involving the welfare of 519 children had been dealt with as against 210 cases and 528 children for the previous year. Of the cases 150 were attributable to general neglect and 21 to ill-treatment and assault. There were eight prosecutions An inspector paid some 3500 visits of supervision and inquiry. This society is doing admirable work but obviously we are very far from the mastery of the conditions that make its efforts necessary. Leith is only an example of what happens in equal proportion elsewhere The Children Act was hailed many years ago as the Children's Charter, but there is still the same weary work to do, and the "Charter" does not seem to have made much difference. This is a problem that might fairly be investigated afresh.

DIABETES AS A FATAL DISEASE.

THE INFLUENCE OF INSULIN

The interest in the mortality from diabetes has redoubled since the early part of 1923, when its treatment by insulin was introduced, and stress has been laid in certain quarters on the fact that in females little or no reduction of the total death-rate from diabetes has occurred since the introduction of this treatment Publication of the Registrar-General's report for 1925 [1] now gives opportunity for study of the death-rates from diabetes for each sex, corrected or standardised so as to eliminate the disturbing factors of varying distribution of age and sex. When this has been done the highest male death-rates in 1916–22 are seen to have been 121 per million in 1916 and 101 in 1922, the rate falling to 81 4 in 1925 For females the highest rate was 98 in 1916, 97 in 1922 falling only to 94 in 1925 This course of events is made the subject of detailed analysis in the Registrar-General's report, the death-rates from 1911–25 for each sex being stated at various age-periods—0–5 to 75+.

The conclusions drawn are profoundly suggestive Comparing average death-rates 1901–10 and 1921–25, it should be premised that there was for males a substantial decrease of diabetes mortality at the ages 15–75, but only a slight decrease for females, and only at ages 25–55, "with large and progressive increase at later ages" The general trend evidently is very dissimilar in the two sexes.

Pursuing the comparison for each decade of life during the 15 years 1911–25, strange differences between the sexes emerge which may be illustrated for the ages 15–25, 35–45 and 55–65 by the following curves drawn from the table on p 47 of the report For other ages the report itself should be consulted. These curves show for males and females respectively the magnitude of the death-rate in each year 1911–25 in proportion to the death rate for 1901–10 stated as 100 Three sets of factors are regarded in the report as having had a possible influence on the course of these death-rates—viz, the partial deprival of food in various forms during the Great War, especially in 1917–18, the possible or probable excessive indulgence in sugar and other foods in more recent years, and the therapeutic use of insulin in the last three years 1923–25 As regards the war period the middle curves, for ages 35–45 in the diagram, suggest a definite influence of altered and reduced diet, and so do the curves for 55–65 The teaching of the curves for ages 15–25 may be regarded as dubious The experience of the last three years, with one exception, points strongly to the value of insulin as a means for reducing the death-rate from diabetes The exception

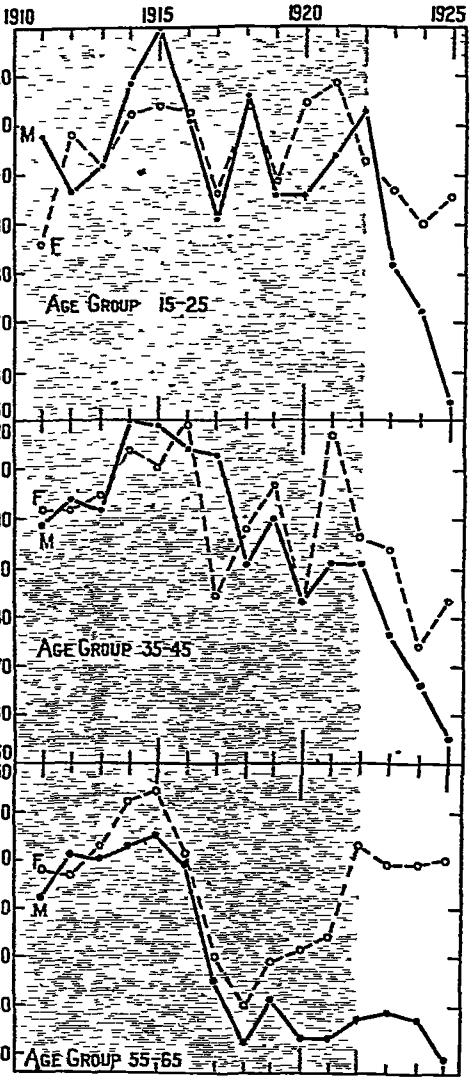

Chart showing the proportional death rate from diabetes between the years 1911 and 1925, of males and females, at various age periods M = Males F = Females The corresponding rate for 1901–10 is taken as 100. The shaded area ends with the discovery of insulin.

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[1] The Registrar General's Statistical Review of England and Wales for the Year 1925 Text. H M Stationery Office 5s

is that part of the curve dealing with women aged 55–65. Why should this curve not have followed the general course, which can be seen in fuller detail in the diagram on p. 48 of the Registrar-General's report, and why should the general reduction in both sexes at ages over 55 have been so much less than that at earlier ages?

No conclusive answer is given in the report to these questions, nor is this possible, but the material suggests a widening of the problem for consideration. Has there been in recent years an undue reaction against the food restriction during war-time which would suffice to account for the failure at higher ages to secure the reduced mortality shown in the young? *This would raise the question as to whether deaths* from glycosuria in elderly people are rightly returned as due to diabetes, but whether wrongly attributed to hyperglycæmia or not, they must for many years to come be classed with diabetes, the result of pancreatic disease. The same problem has appeared in the United States, where also it has been suggested that over-eating in elderly people is largely responsible for the relatively unfavourable course of the diabetic curve at ages over 55. The question is one of which more will be heard.

MEDICINE AND THE LAW.

Mosquitoes as a Nuisance.

IN *what is stated to be the first case of its kind*, the sheriff court at Paisley has held that it is a nuisance within the Public Health (Scotland) Acts if a land-owner allows stagnant water to remain upon his land so that mosquitoes breed there in such numbers as to cause annoyance and injury to local residents. The action was brought by the health authorities of the county of Renfrew, and the court ordered the respondents to clean out the overgrown and stagnant ditches which had become the breeding-place of the mosquitoes.

It is rash for writers in England to offer any exposition of Scots law, but it may perhaps be assumed that the principles of nuisance are the same on both sides of the border. In England we have our own statutory nuisances defined under the Public Health Acts as from time to time extended. And, apart from statute, English common law treats as a nuisance a state of affairs which interferes with the health of the public. From the brief report of the Paisley case in the *Times*, it does not appear that the potential danger of mosquitoes as carriers of malaria was stressed; it was apparently the mere ordinary biting of the insects which annoyed the neighbours. If there were present the added menace to health which would exist in malarial districts, the legal nuisance would be even more clearly established. In England at common law we have known two classes of nuisance. There are public nuisances which are offences against the public where there is prejudice to the health of the public generally. And there are private nuisances—acts which are not necessarily harmful in themselves but which result in prejudice to a particular complainant. Behaviour, which is likely to spread disease, was held to be a public nuisance as long ago as 1815 in the case of R. *v.* Vantandillo where a mother had carried along a public highway her child which was suffering from small-pox. In later years the collection of infectious patients in a hospital was deemed a private nuisance in the case of Metropolitan Asylums Board *v.* Hill. Local authorities have, of course, for a long time been authorised to make by-laws to prevent nuisance from rubbish or from the keeping of animals if injurious to health. From this it is not a long step to stagnant ditches which breed mosquitoes. In the recent Paisley case the land-owners pleaded that they had done nothing wrong and that they were not responsible for an act of nature to which they had not contributed. The plea did not serve, nor would it have served in England, where the principle is embedded in the law that a man must so keep what is his that he does not harm his neighbour.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are some of the 1926 statistics for six districts:—

Name of district and mid-year population	Birth rate	Death rates per 1000 of the population					Death rates per 1000 births		
		All causes	Tuberculosis	Cancer	Resp. diseases with influenza	Heart disease	Diarrhœa under 2 years	Infant mortality	Maternal mort. from childbirth
Wiltshire (298,300)	16·2	11·1	0·60	1·42	1·6	1·8	3·0	50	2·5
Willesden (173,554)	15·5	9·5	0·93	1·37	1·4	1·5	3·7	53	1·9
Sunderland (163,800)	23·1	13·8	1·16	1·18	3·1	1·2	20·4	101	3·1
Grimsby (87,190)	19·8	12·1	1·42	1·35	2·0	1·4	10·2	91	5·8
Stoke Newington (53,080)	16·0	10·7	1·02	1·77	1·8	1·0	7·0	48	4·7
Watford (50,033)	15·2	9·5	1·30	1·28	1·5	1·1	1·3	42	5·2

Wiltshire.

Dr. Claude E. Tangye reports that the towns of Wiltshire have pure and usually adequate water-supplies, but that many of the villages are dependent upon wells which have become hopelessly polluted, and that some of the villages depend upon rain-water only. No new supplies were provided during 1926, but it is hoped that a scheme for Amesbury will be completed in 1927. The recurring appearance of cases of enteric fever at Hindon, coupled with highly polluted wells, has led the Tisbury R.D.C. to formulate a scheme for this parish. The town council of Swindon is promoting a scheme for the extension of their pumping operations at Ogbourne, and at the Ministry inquiry in February, 1927, a protective clause for existing wells within a radius of two miles from Ogbourne was agreed to. A new reservoir is to be constructed by the Trowbridge Water Company to meet the water shortage in Melksham. "Apart from the immediate danger to health involved from contaminated water," says Dr. Tangye, "the milk-producing industry of Wiltshire is likely to suffer in the future if water-supplies to farms remain polluted." The regulations of the new milk order are based on the assumption that a good water-supply is available, and in many Wiltshire farms these requirements cannot be met owing to the dirty and restricted water-supplies. During recent years there has been a great advance in the matter of rivers pollution, but Calne, Malmesbury, and Trowbridge remain to be dealt with. Works at Calne are in progress. At Trowbridge domestic sewage is efficiently treated but unpurified trade refuse is discharged into the Biss. Malmesbury is a source of continuous pollution of the Avon.

Administration of the Milk Act, which became law in September 1925, *has been chiefly confined to dealing* with complaints from outside authorities as to tuberculous milk. During 1926 15 such complaints were received from London County Council, 3 from Salisbury City, and 1 from Woking U.D. As the result 20 cows were identified by the veterinary surgeons as giving tuberculous milk and, with one exception, subsequently slaughtered. Dr. Tangye refers to the difficulty caused by the month's delay in waiting for the result of the biological test and the further month's delay which usually elapses before suspected cows can be proved to be the culprits. Another difficulty is with regard to mixed milk. One of the complaints received referred to the milk of a depôt supplied by 80 farms situated in three counties. These difficulties will, of course, be much reduced when an efficient system of veterinary inspection is in operation in all districts. During the autumn a new joint coordinating subcommittee was formed, including representatives from all the committees dealing with any aspect of the milk question.

An outbreak of food poisoning affecting 40 persons at Downton was thought to be due to cooked ham. Several of those affected were seriously ill but there were no fatal results. The ham was ascertained to be of Danish origin, and a hitherto undescribed bacillus was isolated at the Salisbury laboratory, which on submission to the Lister Institute was stated to be probably of the dysentery type. The county council is the authority for dealing with small-pox, and the new hospital at Ogbourne St. George for the north of the county is now complete. The 317 notifications of diphtheria with 17 deaths is the worst record since 1920. Highworth R.D. with 50 cases, and the town of Devizes with 49 cases, were the most heavily affected districts. Encephalitis lethargica caused 7 deaths among the 20 cases notified and poliomyelitis 4 deaths among the 13 cases notified. The practice of midwifery by unqualified persons has almost ceased. It has been found impossible with the present health visiting staff to extend the supervision of infants up to the school age. The orthopædic scheme centred on the Children's Orthopædic Hospital at Bath is doing good work, but a greatly needed extension is "a satisfactory method of teaching and supervising remedial exercises for postural defects throughout the county."

Willesden

Dr. George F. Buchan reports that year by year four-fifths of the infant deaths in this urban district are due to known causes against which active measures are required. These may be grouped as: (1) congenital malformations, prematurity, &c.; (2) diarrhœa, &c.; and (3) respiratory diseases, including whooping-cough and measles. Of the 143 infant deaths in 1926 62 were caused by the first group, 10 by the second, and 44 by the third. Last year Dr. W. D. Champneys reported on cancer and expressed the opinion that the most important measure would be a cancer clinic for free diagnosis. After the report had been considered by the council the health committee consulted with the local medical advisory committee, and the final outcome was a reference to the health propaganda committee to deal with the question of cancer as a part of health propaganda. There were two cases of small-pox in Willesden during 1926, one of them fatal. The original case, a man of 43, contracted the disease in Paris. He became ill in a London hotel, but the disease was unrecognised. He moved with his wife to a nursing home in Willesden, where his wife became ill with severe hæmorrhagic small-pox and was removed to a small-pox hospital where she died the same evening. The contacts were vaccinated and no further cases occurred in Willesden. Seven cases of typhoid fever were notified, four were removed to the municipal hospital, where two were rediagnosed and one died, this being the only death from typhoid. There were 19 notifications of the infectious diseases of the nervous system with four deaths. Dr. Buchan is much impressed with the value of the work done at the three schools for mothers, and a syllabus of the health talks is included in his report. He complains bitterly, however, of the unsuitability and inadequacy of the premises provided. No progress has been made as regards an open-air school, but a local orthopædic clinic is to be established. The medical staff are taking part in the Board of Education anthropometric inquiry and completed 198 schedules during 1926.

Greater use has been made of Section 111 of the Housing Act of 1925, "but much time is lost in dealing with the disputatious owner." The delay is caused by advertising for tenders, reporting to the committee, and then to the council for acceptance. The owner, in the meantime, obtains information as to progress from the published council agenda and carries out some work. The agreement with the contractor has then to be modified and a new schedule of work and an amended estimate of cost made. The Meat Regulations of 1924 are being observed satisfactorily in Willesden, and one prosecution under the regulations had a salutary effect. At the municipal hospital serum treatment of scarlet fever has given satisfactory results. The percentage of cases with complications has been reduced, and when the serum has been given early the disease has been cut short. There were 306 cases treated without a single death. The Dick test has also been used successfully for the patients in a non-scarlet fever ward after the introduction of a case of scarlet fever. By its means and a subsequent prophylactic dose of scarlet fever antitoxin it is found that complete control over any further occurrence of cases can be maintained. During 1926 the Schick test followed by immunisation has been adopted for the nursing staff in the diphtheria wards. Since its adoption there has been no diphtheria among the nurses, amongst whom previously the incidence of this disease was high. Appendix H is a valuable article on Rheumatism in Childhood by Dr. C. T. Maitland, containing a description of the "rheumatism supervisory centre" of the Paddington Green Children's Hospital. In Appendix I Dr. Alice Gray reports on diphtheria in the Stonebridge area and emphasises the futility of the methods in vogue for the prevention of diphtheria previous to the discovery of the value of the Schick test followed by active immunisation of the susceptible.

Sunderland

Dr. Eustace Thorp (acting medical officer of health for the county borough) says much has been done in the provision of houses for those in regular work, but that little has as yet been planned for that large class, the casual worker, living at present under appalling conditions, who requires his accommodation in the vicinity of the river or his work. There is not much chance also for workers with large young families or for newly married pairs. He thinks the plan of putting old houses into good repair and letting in flats is worth more than a passing thought. Some of these old houses have been well built and can stand alteration and remodelling. The 584 new houses erected during the year included 338 municipal houses and 207 erected with State assistance. Greater efforts are being made by cowkeepers to keep their animals clean. Out of 104 samples of milk examined for tubercle bacilli five gave a positive result. There is a limited number of tradesmen who do not adhere strictly to the rule of the Butchers' Association that, when any abnormality exists or there is any doubt as to the fitness of meat for sale, the advice of the health department should be obtained at once. There are 68 licensed slaughter-houses within the borough. Continued good results in preventing cross infection are reported from the use of the bed isolation ward at the infectious diseases hospital.

Grimsby

Dr. B. C. Stevens reports that the general hospital, with accommodation for 60 patients, serves a wide district, including Cleethorpes and Immingham, and that its sphere of usefulness is curtailed by want of beds. The general level of Grimsby is only one or two feet above ordinary spring tide level and the sewers laid before the erection of the pumping station in 1892 are too flat to be self-cleansing. Three gangs of men with flushing tanks are continuously employed flushing them. There are no street level sewer ventilators and ventilation is achieved by means of shafts erected against buildings and since 1910 by vent columns. For four-fifths of the town pumping of the sewage has to be employed, the periods of pumping and of discharging by gravitation being about equal. The remaining fifth of the town is drained by gravitation, the sewage being held up for about half the time by a penstock. Thanks to the additional pumping capacity there is now no flooding even when a heavy rainfall coincides with spring tides. The town is now practically free of box privies. The hospital pavilion, with 24 beds for advanced cases of tuberculosis, was opened in July, since which it has been fully occupied The *two notified cases of puerperal fever both* terminated fatally Antiscarlet-fever serum was used for septic cases and helped to reduce the temperature, but in one case did not prevent the formation of two abscesses and otitis media Of the 94 cases of diphtheria admitted to hospital from Grimsby all recovered, and this good result is claimed to be due to the early use of antitoxin and prompt bacteriological reports from the municipal laboratory The V D scheme has been improved by the substitution of eight sessions in the week for five New cases of syphilis show a reduction of 35 per cent and all the pregnant syphilitic women attending the clinic have given birth to full-term healthy babies

Stoke Newington

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To the Editor of THE LANCET

SIR —Your article and Dr Tredgold s letter in THE LANCET of June 18th raise a very important question as to the position of specialists in the public health service I think we may at once discount Dr Tredgold s assumption that mental deficiency is to be treated as in a different category from "venereal disease tuberculosis infectious diseases, inspection and treatment of school-children" The specialists in some at least of these branches of medicine might and do claim like Dr Tredgold that their specialism is one of which adequate knowledge for administration cannot be acquired by any but the specialist Much might be said on the subject of extreme specialism from the purely medical standpoint, but I intend to confine myself to the administrative question

Our problem is to find the most efficient organisation through which all this specialised knowledge may be placed at the service of the public. Broadly, there are three ways in which it may be—done either by creating a series of specialist departments with a specialist administrative officer according to the method which Dr Tredgold advocates for mental deficiency, or to have one principal medical officer with a staff of assistants, which is in line with the traditions of the public health service in this country, or to work through a department the principal officer of which is a trained lay administrator making use of technical or specialist officers for appropriate purposes The last method has not been adopted in this country and is contrary to the existing law, but it should be noted that keen and enthusiastic public representatives have advocated it because of the alleged lack of business capacity among medical men in administrative positions I have mentioned it, not because I think the proposal worthy of serious consideration by the medical profession, but as illustrating the recognised importance of good business management While successful medical administration must depend on an understanding of the medical questions involved, administrative ability does not necessarily accompany highly specialised knowledge Like most other things it is usually acquired by apprenticeship and experience, and it is at least doubtful if it is an economic proposition to demand that every specialist in the branches of preventive medicine should qualify himself to be an expert administrator In any case, it is a fact that many of the most highly qualified specialists are peculiarly weak on the business side On the other hand, the medical officers of health of the present day are to an increasing extent men who have clinical experience of the sections of their department including mental deficiency, and are well able to consider the several problems of these sections from the medical point of view, while at the same time the associated administrative, business, and financial questions receive the attention which the public and their representatives demand. For these reasons there is much to be said for the second type of organisation in preference to the first

There is, however, the further great question of coordination This emphatically cannot be attained by the simple procedure of "placing administrative control in the hands of one and the same council" Local government is increasing in scope and complexity and the amount of coordination which can be deliberately and constantly exercised by a council is infinitesimal In practice, committees are formed for various purposes, and those which have strong chairmen are apt to develop their services at the expense of the others, for there is a limited amount of money available for all local government purposes Sectional and ill-balanced development of the medical services occurs much more frequently where these committees have not one but several independent officers of different degrees of acceptability to the lay mind In these circumstances such control and coordination as there is rests in the hands of the finance committee, and, if there is not one strong and important medical officer to whom large questions may be referred, the power inevitably passes into the hands of the chief financial officer of the council Is this the sort of coördination which the medical profession would desire?

So far as mental deficiency is a medical question at all, there is, therefore, much to be said for its remaining within the department of the medical officer of health, especially in view of the fact that a large proportion of the defectives—those of school age—already come under his purview if he is school medical officer The status of the officer or officers who do the routine work is thereby, of course, diminished, but it is an open question as to whether their prospects are not enhanced rather than limited by their association with the general health service, although their emoluments for the time being may be less The combined efforts of medical officers of health have already been much more successful in raising the salaries of their assistants than their own, and it must be our constant endeavour to see that specialist knowledge is adequately rewarded Further, no medical officer of health who appreciates the importance of the clinical services he controls will make any secret of the fact that the responsible sectional officers know more about the details of their cases than he does or that he depends upon them for opening up the problems which require administrative solution

The point is that one important medical officer should have the duty of guiding the council in the distribution of a strictly limited supply of public money among the various medical and allied services What official can serve that function but the medical officer of health? The advantages of this arrangement have long ago been recognised by other Government departments, and it is not likely that much more will be heard of the Board of Control's attempt to break away I am, Sir, yours faithfully,

RALPH M F PICKEN

City Hall, Cardiff, June 20th, 1927

To the Editor of THE LANCET

SIR,—In commenting on Dr Tredgold's interesting letter I shall perhaps be the less suspect by him if I make it clear that I happen to have had no part in the preparation of the memorandum from the Society of Medical Officers of Health to which he takes such grave objection The kernel of the case which Dr Tredgold is maintaining is that, to remedy the alleged failure of local authorities to put the Mental Deficiency Act into effect, mental deficiency should in each area be under the administrative control of a mental expert reporting direct to the appropriate committee of his council, and independent of the medical officer of health, "meeting him on equal terms" as a colleague.

Few will disagree with the desire for the appointment of consultants for the diagnosis of the exceptional case and for advice on the proper measures of treatment and care, especially if he is adequately seized of the great importance of the psychological study of the individual social and domestic difficulties which may have been the decisive factors in pushing the patient over the line of mental dullness into mental deficiency But the separation from general public health which, whatever Dr Tredgold may think, does in practice occur when public health work is removed from the sphere of the *medical officer of health*, would be the gravest of steps for the mentally defective themselves Such a separation would cleave a gulf between the feeble-minded on the one hand, under the control of the new "medical officer for mental health," and on the other, the dull and backward child, as well as the infant and young child, who would continue to be under the supervision of the medical officer of health Dr Tredgold and the Board of Control cannot be aware of the loss of coördination and efficiency and the waste of effort to be found where the school medical service is kept separate from the public health department, even though it fulfils Dr Tredgold's requirements of being under a committee of the same Council How much more would this apply to mental deficiency, so much less familiar to the general public? Only by the closest linking up with the general activities of public health can this difficulty be overcome In mental disease, far more than in physical disease, there is amongst the general public a fear of the expert, and the direction of the administrative machinery of mental deficiency by such an expert might well engender a timidity in the public not conducive to successful working.

But this represents the superficial and not the fundamental objection, and it is the fundamental objection which I must now attempt to set out If the public administration of mental deficiency were in the hands of the expert—in particular of the large number of experts of varying experience and bias who would enter into the national scheme—there would be a great risk of diagnosis of too many rather than too few cases of mental defect It is infinitely better to have even considerable under-diagnosis (though not failure to examine all suspects) than the most remote risk of the premature labelling of the borderline case The non-expert is less likely to err in this direction than the expert For many patients on the borderline between mental backwardness and deficiency the attachment of the label of mental deficiency implies the loss of all incentive towards effort by the patient and his relatives, and its replacement by a hopeless acceptance of inferiority In such cases investigation of adverse environmental factors peculiar to the patient might have given him and his household courage for renewed effort, a fresh view of his difficulties and renewed hope to overcome them The Board of Control find that local authorities are at present failing in their ascertainment of cases This may in part indicate neglect, which is remediable It no doubt implies also that largely this borderline group of cases is not being so freely labelled as feeble-minded as might be the case under the direction of the expert That fact lies at the root of the objection to the rule of the expert —I am, Sir, yours faithfully,

H P NEWSHOLME

Public Health Department, Town Hall, Croydon,
June 21st, 1927

PETECHIASIS

To the Editor of THE LANCET

SIR,—Reading in your last week's issue Dr Moreland McCrea's very able article on petechiasis, I was specially interested in his suggestion that excessive loss at the periods or between them may on occasion be due to a generalised toxin acting on the vessels of the endometrium The fact is that the changes that occur in the endometrium during normal menstruation are themselves akin to petechiasis, that is to say, that a transudation of red blood corpuscles through the still intact walls of the endometrial capillaries precedes the actual breakdown of the capillaries The endometrium is in fact being acted on by some substance conveyed to it by the blood stream The exact nature of the substance is unknown, as also its seat of formation, but as far as its effect on the endometrium is concerned, it is to all intents and purposes a " toxin "

I am, Sir, yours faithfully,

VICTOR BONNEY

Devonshire-place, W , June 18th, 1927

FAT AND TUBERCLE

To the Editor of THE LANCET.

SIR,—In THE LANCET of Jan 8th Dr W B Vaile published an investigation into the incidence of pulmonary tuberculosis in families exposed to infection, with the object of finding some common factor which governed the principle of selection of victims of the disease Having investigated the home conditions of more than 40 families in which tuberculosis infection had occurred, he found that it was most frequently those members who did not eat fat, and had avoided it as far as possible all their lives, who fell victims to the disease He came to the conclusion that, although the fat-eater has no absolute immunity, and the " fat-shy " is not doomed to the disease, there is a tendency for the " fat-shy " to be more readily infected than the fat-eater

I have investigated the likes and dislikes in regard to fat of 228 patients at present under treatment in the King George V Sanatorium Adopting the same procedure as Dr Vaile, and making allowance for the fact that even " fat-shy " people will eat over-cooked fat, such as fried bacon fat, I find that the numbers in the two categories are .—

Fat-eaters .	126	Fat-shy .	102

These results are of course not comparable with those obtained by Dr Vaile, for he examined the members of families living under identical conditions, and included non-infected as well as infected in tabulating his results In my investigation only infected male adults are available for inquiry, and these patients have come from parts of London differing widely in regard to environment and type of home Further, to be able to correlate the incidence of tuberculosis with a disability to eat fats, it is necessary to know what is the average proportion of fat-eaters to non-fat-eaters in the total population, and particularly in the male population On this point no statistics are at present available, but it is reasonable to presume that fat-eaters preponderate greatly over non-fat-eaters The lowering of this proportion to almost one to one amongst persons infected with pulmonary tuberculosis supports the contention put forward by Dr Vaile

My observations will appear in the forthcoming annual report of the Metropolitan Asylums Board I am quoting the figures now in the hope that others may test Dr Vaile's interesting hypothesis

I am Sir, yours faithfully,

DOUGLAS PORTER,

Senior Assistant Medical Officer, King George V
June 20th, 1927 Sanatorium, Godalming

CHICKEN-POX AND HERPES ZOSTER

To the Editor of THE LANCET.

SIR,—In view of the notes on this subject which have appeared in your columns from time to time, the following case will be of some interest A youth of 19 years was reported to the Health Department as suffering from chicken-pox In view of his age, it seemed advisable for me to see him, when I found a definite chicken-pox rash and herpes zoster of the intercostal type, which had appeared at the same time

I am, Sir, yours faithfully,

E THORP,

Assistant Medical Officer of Health,
June 17th, 1927 Sunderland.

WILLIAM MACKENZIE MEMORIAL —With a view to the encouragement of original work in ophthalmology a William Mackenzie Memorial Fund has been established in Glasgow. More than a century has passed since Mackenzie entered upon the practice of ophthalmology and founded the Glasgow Eye Infirmary, and it is nearly 100 years since the publication of his " Treatise on the Diseases of the Eye " A small committee will be elected annually, consisting of ophthalmic surgeons in Glasgow, and this committee will have a wide discretion as to the way in which the income of the fund is to be expended A medal will be awarded from time to time to the author of original work of outstanding merit in ophthalmology, and, so far as the income permits, grants may be given in aid of research or for other kindred purposes Contributions towards the fund are being received by Dr A J Ballantyne, 11, Sandyford-place, Glasgow, C 3.

DONATIONS AND BEQUESTS —Mr Lewis Spokes Richards, Edgbaston, Birmingham, left to the Royal Orphanage, Wolverhampton, a sum sufficient to endow a cot for boys , £1000 each to the Children's Hospital, Birmingham, the Birmingham Cripples' Union and Royal Orthopædic and Spinal Hospital, the Birmingham Bluecoat School and Dr Barnardo's Homes , and £500 each to the Birmingham Eye Hospital, the Birmingham Ear and Throat Hospital, the Birmingham Blind Asylum, the Birmingham Deaf and Dumb Asylum, and the Aston Manor Nursing Institution —Mr William Beldam, Littlehampton, left £1000 to the Littlehampton and District Hospital ; £300 to the Crawley Cottage Hospital , £100 each to the Girl Guides, Littlehampton, the Boy Scouts, Littlehampton and Arundel Branch , St. John's Ambulance Brigade , and the Littlehampton and District Nursing Association —Mr Whiteley Varley, of Hebden Bridge, left £500 to the Halifax Royal Infirmary and £500 to any public nursing home or hospital at Hebden Bridge,

Obituary.

ALEXANDER HUGH FREELAND BARBOUR, M D , LL D , F R C P EDIN.

THE sudden and unexpected death of Dr. Freeland Barbour on June 11th is felt with deep regret in Edinburgh, not only by the medical profession but throughout the city, for apart from his work as a gynæcologist, Dr Barbour was a pillar of the United Free Church, and is widely remembered as a man who was always ready to give where help was needed

Born in 1856, he was the youngest son of the late G F Barbour, of Bonskeid and Gryffe, and was educated in the University of Edinburgh, where he graduated as M A in 1875 and B Sc in 1877 Two years later he took a medical degree, and went over to the continent to continue his studies at Berlin, Paris, Vienna, and other centres Returning to Edinburgh he became a Member of the Royal College of Physicians in that city, and two years later a Fellow From this time he was closely associated with the College, and in 1914 was elected its President In 1883 he was awarded a gold medal for his M D thesis on Spinal Deformity in Relation to Obstetrics, a paper which was the result of painstaking original research, and which proved to be the first of a series which have considerably influenced gynæcological practice Henceforward he devoted himself to gynæcological work, and became assistant to his brother-in-law, the late Prof A R Simpson, before being appointed physician to the Simpson Memorial Royal Maternity Hospital and gynæcologist to the Royal Infirmary of Edinburgh, in both of which institutions he served a full term of office His teaching was always an important element in his success, for many years he was a successful teacher in the extra-mural school, and on the institution of a lectureship of gynæcology in the University it was natural and fitting that he should be appointed to this post, in which he maintained and enhanced the traditions of the obstetrical school founded by Sir J Y Simpson His knowledge of examinational standards led to his appointment as inspector of examinations in midwifery for the General Medical Council To those that studied under him his clear and lucid descriptions will ever be remembered, and his interest in his classes was personal as well as instructional He was one of the few who continued to live in Charlotte-square—long considered the home of medicine in Edinburgh—and here he entertained students of all classes and nationalities In character he was quiet, kindly, and unassuming, and his religious belief had always its practical application

DR FREELAND BARBOUR

Photograph by A Swan Watson Edinburgh

It is by his publications that Dr Barbour's work is best known to the medical profession at large His "Manual of Gynæcology," written in collaboration with the late Dr Berry Hart, was for a quarter of a century a leading British text-book, and ran rapidly through many editions, being translated into French, Italian, Spanish and finally Chinese His latest work, "Gynæcological Diagnosis and Pathology," was written with Prof B P Watson, formerly one of his pupils, and is already well known His "Atlas of the Sectional Anatomy of Labour" is another classical work which testifies to a detailed knowledge of this intricate subject Other contributions to the literature will be found in the Transactions of the Obstetrical Society of Edinburgh

Dr Barbour's eminence as a gynæcologist was recognised by the Universities of Edinburgh and Toronto, which conferred on him the degree of Doctor of Laws, and he was made a Corresponding Fellow of the Royal Academy of Medicine of Turin and the Obstetrical Society of Leipzig In 1889 he married Margaret Nelson, elder daughter of the Hon George Brown of Toronto She survives him, with two sons and three daughters

HENRY CECIL EARL, M D. DUB., F R C P IREL

THERE is much regret among members of the medical profession in the Irish Free State at the death of Dr H C Earl, who succumbed to a long illness on June 16th Having taken his medical degrees in Dublin University in 1886, he spent some years as assistant to the King's Professor of the Institutes of Medicine in his old school In 1897 he opened a clinical research laboratory, and thereafter practised exclusively as a clinical pathologist He was pathologist to the House of Industry Hospitals, and for a time to the Rotunda Hospital He became a Fellow of the Royal College of Physicians of Ireland in 1891 and served in several of the offices of the College Dr Earl had a sound knowledge of pathology, and his opinion carried great weight He was, outside his specialty, a man of wide reading and much culture, interested in art and literature He had a caustic wit, which failed to conceal a very kindly disposition. His companionable qualities, together with a very high sense of personal and professional honour, made him as much liked as he was respected by his medical colleagues

THE LATE DR J G G CORKHILL —The death took place at Birkdale on June 10th, in his sixty-fifth year, of Dr Joseph George Garibaldi Corkhill, physician to the Southport Smedley Hydropathic Establishment Dr Corkhill qualified as M R C S Eng in 1884 and graduated M D Manch in 1901, and M D Liverp in 1901 He was at one time chairman of the Southport Division of the B M A and of the Southport Medical Society, and was in practice in the district for many years, previously holding resident appointments at the Royal Infirmary and at the Stanley Hospital, Liverpool He was the author of several contributions to medical journals

THE LATE DR W A FULLER —Dr William Anderson Fuller, who died at Leeds on June 3rd at the age of 54, was the younger son of the late Lieut -Colonel Henry Fuller Receiving his medical education at Guy's Hospital, he qualified as M R C S Eng in 1898, and held house appointments at Huntingdon and Hastings. After a period as ship's surgeon in the East he took up practice at Milnthorpe, Westmorland, in 1905, taking over the practice of Dr G H Seagrave For the last 22 years of his life he worked in the village, in whose life he took a large part About two years ago he was made a justice of the peace for the county Dr Fuller married Miss Madge Seagrave, who survives him with one son and two daughters

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CROYDON GENERAL HOSPITAL —Attention is being called to the pressing needs of this institution, extensions to which are to be opened by the King and Queen on June 25th The board of management have been compelled to borrow £30,000 from the bank, yet the enlargements do not include any increase in the number of beds Patients recovering from minor injuries have to be placed in lobbies and corridors, and serious cases turned away for lack of room The nurses also are inadequately provided for The present enlargement consists of an entirely new and comprehensive outpatients' department, with complete accommodation for casualties

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Pharmacists and the Shop Hours Acts.

AT the meeting of the Departmental Committee appointed by the Home Secretary to inquire into the working of the Shops (Early Closing) Acts, held on Thursday, June 16th, a letter was read from Mr. W. Huntrods, president of the Incorporated Society of Pharmacy and Drug Stores Proprietors of Great Britain, Limited. Mr. Huntrods stated that he had gone through the précis of evidence submitted to the Committee by the Retail Pharmacists' Union, with which taken as a whole he entirely agreed. Therefore, he did not think that it was necessary for him, along with other witnesses, to appear before the Committee in person. He would like, however, to supplement the views on a few points omitted in the precis referred to. Reference had been made to pharmacists, either registered or unregistered, being called upon to supply certain medicines, &c., after hours. He was firmly of the opinion that whilst this privilege should remain it should be confined to members of the Retail Pharmacists' Union and members of the Incorporated Society of Pharmacy and Drug Store Proprietors of Great Britain. On the other hand, he was desirous of pointing out that all necessary calls on pharmacy proprietors outside hours were infinitesimally few, and that in the event of a patient visiting a doctor in the case of sudden illness, the doctor had the prerogative of supplying the patient with the necessary medicine. He was firmly of the opinion that the shop closing hours should not be in any way extended, and he proposed that the closing hour on Saturday should be reduced at the least to the common level of the ordinary week-night closing hour—i.e., 8 o'clock. It was a well-known fact that the average working man finished his work approximately about noon on Saturdays, and had plenty of time to spend his money for necessities in two or three hours. He suggested that the closing hour on Saturday should not be allowed to exist as one hour longer than the ordinary closing hour, but should be one hour earlier—i.e., 7 P.M. Mr. Huntrods added that he presumed that it had been brought to the Committee's notice that there were many cases of sudden illness, and he would, therefore, re-emphasise the fact that the doctor had the prerogative under the National Health Insurance Act of supplying what was really necessary.

Tuberculosis in the Boot Trade.

At the same meeting of the Committee evidence was submitted by Messrs. H. Crabb and W. Orchard, representing the Joint Committee (Parliamentary) of the Retail-Bespoke, Making-Repairing Boot Trade (Employers and Employees). They stated that over 350,000 persons were engaged in the retail, bespoke, making, and repairing boot trades, and they desired on their behalf to place before the Departmental Committee the absolute necessity for the continuance of the general Early Closing Laws, subject to certain amendment, and asked that the present system of yearly renewals of the general Closing Order should be terminated and that the order should be made permanent, and should include within its scope boot-repairing establishments trading with the public direct. No one acquainted with the history of shop life would desire, they said, to return to the extremely bad conditions which obtained in the retail stores and shops of the boot trade up to comparatively recent years, when shops were kept open from 7.30 and 8 A.M. to 8.30 and 9 P.M. on Mondays, Tuesdays, Wednesdays, and Thursdays, and until 10 P.M. on Fridays, and 11 to 12 P.M. on Saturdays, and as the shop assistants and traders constituted a considerable portion of the community, it would be obvious that some attention should be given to the conditions of their hours of service to the public. As late as 1908–10 it was found as a result of an inquiry that working hours varied from 60 to 90 per week. The traders connected with the retail side of the industry were definitely in favour of the Early Closing Order, and would regret any modification of the existing orders which would have for its object the extension of or lengthening out the hours of service. On the health side of their appeal must be placed the demand for shorter hours. The trade was one in which boots, dusty and germ laden from the streets, came into direct contact with the worker. Consumption was rife amongst the operatives. Gastric troubles were numerous, also sickness, much of which was preventable. This constituted a considerable drain upon a business. The removal of night work after 7 or 8 P.M., concentration of services within the day periods, in the witnesses' opinion, would help to modify the inroads made upon the health of this portion of the community. Overwork and long hours produced unhealthy workers. Long periods in an unhealthy atmosphere sapped the vitality of the operatives. The National Union of Boot and Shoe Operatives handed into the Committee the following statistical table, showing the percentage of deaths due to tuberculosis among operatives in the trade from June, 1921, to December, 1926:—

	Number of deaths' and percentage		Number of deaths and percentage
June, 1921	77 (27·2)	June, 1924	69 (21·7)
December, 1921	64 (28·8)	December, 1924	61 (26·1)
June, 1922	82 (25·3)	June, 1925	72 (25·8)
December, 1922	46 (21·1)	December, 1925	47 (22·1)
June, 1923	54 (20·6)	June, 1926	63 (20·4)
December, 1923	51 (27·4)	December, 1926	45 (18·8)

Average 23·7.

It was stated by Mr. Orchard that his was the only organisation which had made a medical survey to ascertain the rate of consumption in their trade. He was a member of the executive body of the Boot Trade Benevolent Society, and they were faced with very considerable expense in making provision for the treatment of consumptive workers, which was the result of the conditions in the trade referred to in the evidence.

The Committee adjourned.

Audit (Local Authorities) Bill.

In the House of Commons on Wednesday, June 15th, on the motion for the second reading of the Audit (Local Authorities) Bill,

Mr. ARTHUR GREENWOOD moved a reasoned amendment in the following terms:—

> "That this House, being of opinion that the powers now vested in district auditors are anomalous and contrary to the principles of democratic government, declines to proceed with a Bill which fails to safeguard the rights of local elected authorities in the exercise of the duties imposed upon them by Acts of Parliament and the will of the community, indirectly increases the powers of bureaucratic officials independent of popular control, and establishes the principle that duly elected representatives of the people may be disqualified for holding office otherwise than for corruption, misconduct, or negligence, and notwithstanding that they retain the confidence of their constituents."

He said that the greatest objection to the measure was the constitutional one that it put extraordinary powers and penalties into the hands of the district auditor, and it put civil powers and penalties into the hands of the Minister of Health for the banishment from public life of his political opponents. The Bill was not merely a fussy interference with the rights of local authorities, but was really a blow at the development of social services by the local authorities, of a new attitude towards the people they employed, and an attempt to use the machinery of the State for party ends. That was bound to fail.

Miss SUSAN LAWRENCE seconded the amendment.

Mr. PALIN, in supporting the amendment, said he was surcharged 30 years ago as a Poor-law guardian because he voted for the provision of a little greenhouse in the workhouse grounds in order to supply flowers and plants for the hospital wards of the union infirmary.

Dr. SALTER said that he understood—he did not know whether it was true—that the district auditor had informed one borough council that at the next audit he was going to consider the question of the salaries of rate collectors and persons similarly employed, and he had indicated unofficially that he would probably surcharge in respect of the salaries of those rate collectors. What standard was he going to set? Certain borough councils paid extremely high salaries to their officials and poor wages to their workmen. The labour borough councils, on the other hand, had paid relatively high wages to the workmen. Those councils were to be surcharged, but what about the Tory borough councils that paid high salaries to their chief officials? He knew that in respect of the members of his own profession who were applicants for posts of medical officers of health, tuberculosis officers, assistant medical officers of health, and similar municipal offices if a labour borough council offered a salary of £800 per annum the Minister intervened and said: "That is not enough; you must pay more." The whole position at the present moment in regard to municipal administration was simply chaotic, and unless it was cleared up and simplified in a way that this Bill did not attempt to do the whole standard of public life in this country would be lowered and in particular they would drive out, or cause to retire from public life, a great many of the best type of administrators, men whom this country could ill-afford to lose.

On a division the amendment was rejected by 229 votes to 91 and the Bill was read a second time.

Poor-law Bill.

Mr. NEVILLE CHAMBERLAIN moved the second reading of the Poor-law Bill which, he said, was a monumental measure containing 245 clauses and 11 schedules. It was one of the largest pieces of consolidation work which had

owing to the adoption of more sensible clothing, and that had created a desire for physical fitness There they had the key to what could be done at a comparatively small cost. Advantage should be taken of all those forces which he had mentioned Education should be fostered and they should go on improving houses and the chances of those who were less well off to enjoy games and outdoor sports If all these things were done for ten years, and especially if health lectures were given all over the country, then not by fanatics preaching against the evils of this, that, and the other, but by people teaching what health meant, what good food meant, and what the disadvantages of alcohol really were as well as its advantages, they would appeal to the convictions of the people and get far greater success in any campaign for temperance than by the provisions of a Bill such as that before the House

The Earl of **ONSLOW** said that the Government were heartily in concurrence with the wishes of the supporters of the Bill, and were no less desirous than they were to secure judicious reform. They could not, however, at the present time assent to a measure which involved the reopening of the controversial question of the amendment of the licensing laws The report of the Southborough Committee on Disinterested Management was just out. It had only been in the hands of the Government a short time There were other matters connected with the licensing laws not dealt with in that report which it would be necessary to consider before any Government could give a pronouncement on the subject.

The debate was adjourned

HOUSE OF COMMONS.

WEDNESDAY, JUNE 15TH

Landlords and Vaccination of Tenants' Children

Mr **THURTLE** asked the Minister of Health if his attention had been drawn to a recent case in which a landlord obtained an order for possession of one of his dwellings on the ground that the tenant had failed to have one of his children vaccinated , and if he was prepared to amend the law in order to make it illegal for the vaccination of children to be a condition of any tenancy agreement.—Sir **KINGSLEY WOOD** (Parliamentary Secretary to the Ministry of Health) replied The answer to the first part of the question is in the affirmative and to the second part in the negative

Tuberculosis in North Wales

Sir **ROBERT THOMAS** asked the Minister of Health what were the returns of deaths from tuberculosis in North Wales for the years 1919 and 1926 , and whether the statistics showed an increase or a decrease upon the figures for the corresponding period before the war —Sir **KINGSLEY WOOD** replied The figures show a considerable diminution in the death rate from tuberculosis in each of the six counties in North Wales since 1911 The death-rate from tuberculosis in each administrative county and county borough appears in the Registrar-General's annual reports and statistical review, part I , for the years 1911–1925 The death-rates per million living for 1911, 1919, and 1926 in the six counties in North Wales are as follows —

—	1926	1919	1911
Anglesey	1448	1681	1787
Carnarvonshire	1661	2155	2216
Denbighshire	779	1206	1509
Flintshire	723	1052	1387
Merionethshire	1494	1910	2089
Montgomeryshire	979	1394	1318

Distilled Water in H M Ships

Sir **BERTRAM FALLE** asked the First Lord of the Admiralty whether each of H M ships in commission was fitted with an aeration plant for the aeration of distilled water supplied to the ships' companies for drinking purposes or whether the only aeration plants fitted in H M ships were those purchased by the various ships' companies for the purpose of manufacturing aerated fruit juice drinks —Lieut.-Colonel **HEADLAM** (Parliamentary Secretary to the Admiralty) replied The arrangements provided in H M ships for aerating distilled water before it is supplied to the ship's company for drinking purposes are as follows The delivery pipe from the distiller pump is led into a test tank and from thence the water gravitates into the storage tank In both tanks the water is aerated by spraying from the delivery pipe through a special rose into the tank

THURSDAY, JUNE 16TH

Medical Appointment at Dartmoor.

Mr **MONTAGUE** asked the Home Secretary how many prison hospital officers were offered promotion and did not accept the post of hospital principal officer at Dartmoor , how many declined , and the number against whom disciplinary action was taken involving forfeiture of promotion to this rank —Sir **WILLIAM JOYNSON-HICKS** replied The number of officers who declined the offer of promotion to this post at Dartmoor is three No question of disciplinary action arises, but one of the three officers who failed to give reasons satisfactory to his superiors will not in the ordinary course be considered again for such promotion

Inspection of Children's Homes

Mr **PETHICK-LAWRENCE** asked the Home Secretary what steps he proposed to take to implement the proposals of the Child Adoption Committee relating to the inspection of homes and institutions for poor children or young persons which were wholly or partly supported by voluntary contributions —Sir **WILLIAM JOYNSON-HICKS** replied . I propose to take these recommendations into consideration in connexion with other recommendations made by the Young Offenders' Committee which in both cases involve amendments of the Children Act, 1908

Pensioner and Refusal of Major Operation.

Mr **HARMSWORTH** asked the Minister of Pensions whether the refusal of a major operation was in any circumstances prejudical to a pensioner's claim for reassessment of his pension , whether, in a recent case the recommendation to operative treatment at Queen Mary's Hospital, Roehampton, was not regarded as restoring the Ministry's view of the pensioner's condition from the time of his previous operation in April, 1924, until November last year, when there was a reported recovery of 10 per cent , and whether he would cause a reinvestigation of the case in the light of the new evidence afforded by X ray examination and treatment in hospital —Major **TRYON** replied The penalty provided under Article 4 of the Warrant by way of direct reduction of pension would not be applied in such a case, but a claim to an actual increase of pension on account of an increase of disablement following on the refusal of a course of treatment, considered by my medical officers to be both advisable and reasonable, could not be admitted The condition which was found in hospital last month does not show that the assessment given in November and confirmed by the Medical Appeal Board in December was incorrect and there are no grounds for a reinvestigation

Local Authorities and Rural Housing

Mr **ROBINSON** asked the Minister of Health whether any proposals had yet been submitted by local authorities under the Housing (Rural Workers) Act , and in which counties were houses being reconditioned or extended to provide additional accommodation for workers in rural districts. —Mr **CHAMBERLAIN** replied Proposals have so far been submitted by 40 local authorities under the Housing (Rural Workers) Act, 1926 Other local authorities have schemes under consideration, but have not yet actually submitted proposals With regard to the last part of the question, statistics as to action taken under the Act are not yet available The following is the list —

County Councils —Cheshire, Cornwall, Cumberland, Derby, Devon, Dorset, Essex, Gloucester, Hereford, Kent, Lancashire, Lincoln (Holland), Lincoln (Lindsey), Middlesex, Northampton, Northumberland, Somerset, Stafford, Suffolk East, Surrey, Sussex East, Westmorland, Wiltshire, Worcester, Yorks East R , Yorks North R., Yorks West R , Anglesey, Brecknock, Carnarvon, Carmarthen, Denbigh, Montgomery, Monmouth, Pembroke

County Boroughs —Worcester

Rural District Councils —Aylsham R D C , Isle of Wight R D C , Smallburgh R.D C , Wayland R D C

London Lock Hospital

Lieut -Colonel **FREMANTLE** asked the Minister of Health if he had received complaints with regard to the management of the London Lock Hospital , if he was in a position to reassure the public on the subject , and, if not, in view both of the grants made to it by public authorities and of the national importance of the work which it undertook he would direct an inquiry to be made —Mr **CHAMBERLAIN** replied The hospital in question is a voluntary one and my hon and gallant friend will appreciate that the general management of voluntary hospitals does not come under my review Any grants to this hospital in respect of specific services are made by local authorities, principally by the London County Council I understand that the council have given notice of withdrawal of their grant in connexion with a general review of their arrangements for the venereal disease service, and I have concurred in their proposed action In these circumstances there seems no reason for any inquiry

Valvular Disease of the Heart among Soldiers

Dr **VERNON DAVIES** asked the Secretary of State for War the total number of soldiers invalided under the age of 21 years for valvular disease of the heart during each of the last five years for which statistics were available —

ever been attempted in this country, and he thought the gratitude of the general public, and particularly those concerned in the administration of the Poor-law, was due to the parliamentary counsel and the other ,officials who with extraordinary skill and with immense pains and labour had carried through the gigantic undertaking

The Bill was read a second time

PROTECTION OF ANIMALS AMENDMENT BILL.

On Friday, June 17th, the Protection of Animals (Amendment) Bill was considered in Committee (This measure amends the Protection of Animals Act, 1911, which makes it an offence to put down poison on land or buildings)

Dr **DRUMMOND SHIELS** moved two amendments, the first of which substituted for the word "vermin" which may under the Bill be destroyed by the laying down of poison in the interests of public health, agriculture, or the preservation of animals, the words "insects and other invertebrates, rats, mice, and other small ground vermin." He explained that on the second reading of the Bill he objected to the measure on the ground that the word "vermin" was too vague and injured wild birds especially He understood that the form in which he had moved the amendment was accepted by the promoters of the Bill The second amendment was to include wild birds among those which were to be safeguarded from poison

Both amendments were agreed to and the Bill passed through Committee

HOUSE OF LORDS.

TUESDAY, JUNE 21ST

LIQUOR (POPULAR CONTROL) BILL

THE House resumed the debate on the second reading of the Liquor (Popular Control) Bill, a measure which proposed to confer on boroughs of over 50,000 inhabitants and licensing districts the right of deciding periodically whether there is to be in their area "no change" in the present system of private ownership of the liquor trade, or whether the trade is to be reorganised under a system of public control on the lines adopted at Carlisle , or whether the sale of intoxicants in the area is to be prohibited

The Option of Prohibition

Lord **DAWSON** said that the most drastic proposal of the Bill was the option of prohibition. That was not necessary to the fabric of the Bill and was put in to satisfy the extreme temperance reformers who had made no secret of their intention to withhold their support from the measure if it did not contain that option. That fact alone would make him cautious about accepting a measure which presupposed that liquor was a poison and an accursed thing If it were adopted there would be no opportunity to go back if it turned out to be a mistake It might be too soon to say whether prohibition had been successful or not, but so far as it had gone they ought to be very cautious before they touched it in any way In countries where it had been adopted it had produced "bootlegging" and more drinking among the young than existed before A fresh view ought to be taken of the liquor question and the matter should be approached in a fresh way Duress was the curse of this Bill If they could, by common agreement, foster the influences which they knew were increasing temperance they would get a result in ten years which they would not get in a generation by any other means There was a serious danger of temperance reformers being the greatest obstacles to reform

Decrease in Drunkenness

There was ample evidence that the country was becoming more temperate They had only to go to the theatres, the cinemas, to the big restaurants, and to places of public resort on bank holidays to see that the amount of actual drunkenness was extremely small There was far less drunkenness in this country than in prohibitionist countries on the other side of the Atlantic. He had never seen, in recent years drunkenness of so terrible a character in this country as he had seen in prohibitionist countries The evidence with regard to disease due to alcohol showed a steady improvement, so much so that the provision that had to be made in the hospitals years ago were now found to be no longer necessary But there could be a great deal of harmful drinking without actual drunkenness and disease, and he was entirely with the supporters of the Bill in saying that there was too much drinking still and that they ought to set to work to hasten the movement towards greater temperance He could, however, give their lordships some encouragement. Let them consider a large and important section of the community, the people of moderate means, who gathered in popular restaurants possessing a full licence A full inquiry made three years ago showed that of the people who congregated in certain big restaurants 75 per cent. consumed no alcohol at all and of the 25 per cent. who did take drink, no less than three-quarters of them were drinking either light wine or beer, and only one-quarter consumed whisky or port That was a very striking testimony to the progress of temperance and of real sobriety He had made it his business, in view of this debate, to inquire whether those figures had become better or worse The answer was that in one restaurant the number of people who took liquor had gone down from 25 per cent to 17 per cent , and in another it had fallen to 7 per cent

The Habits of the Man under 35

In all investigations as to progress or otherwise of sobriety, it was the best and the fairest way to make a division between persons aged 35 and those under After 35 people's habits were formed, and if one became a drinker by that age he would very likely go on. What really mattered in this country was what people under 35 were doing He adopted that method in his next inquiry, which he made among the clerk class Taking the clerks over 40 he found that 21 per cent. were abstainers and 40 per cent. of those under 40 were abstainers That was quite in keeping with his own observations The clerk class in London, especially the younger ones, drank remarkably little If they turned to the army and asked any of the people responsible for the young soldiers, they would discover the same thing For instance, at Aldershot the young men came from their heavy drill in the morning about 11 30 or 12, and went, helter-skelter, to the canteen Five out of six of them went to the "dry" canteen, and only an infinitesimal number went to the "wet" canteen It was an interesting fact in regard to those who went to the "dry" canteen that they always asked for something sweet, showing that for the young sugar was a very good substitute for alcohol He asked some of his friends in the army recently, and they told him "It is absolutely true that the young soldier does not drink , you have only to look at him to see that." He had made it a point in the last few weeks to inquire among his business friends about drinking in business. It was quite true that it was far too rife It was an essentially damaging form of drinking, because it involved drinking on an empty stomach, as in the case of cocktail drinking, but it was decreasing and was far less prevalent than formerly He realised that in his inquiries he had not got down to the unskilled labour class, so he set to work, with some coadjutors, well qualified in finding out what people did and did not drink, because in any big hospital they got to know what an answer meant, whether it was "Yes" or "No" pretty quickly They went through the records of between 1500 and 1600 people of the unskilled labourer class The results were so striking and so much better than he expected that he handed the papers over to an actuarial friend to make something of them He (Lord Dawson) divided the total into abstainers, the temperate, and the imperfectly temperate He was up against the difficulty as to what to make the threshold of temperance He chose the figure 2, by which he meant to denote two drinks He took the standard of a pint of beer or one glass—not a full one—of whisky Taking the people under 35 and adding together the temperate people and the abstainers, they amounted to 90 per cent ; and the imperfectly temperate were 10 per cent. There was a change after 35, when the temperate people and the abstainers came to 71 5 per cent and the imperfectly temperate people to 28 5 per cent. Taking the abstaining people alone under 35 they were 51 per cent., and over 35 only 22 5 per cent.

It was open to people to say that the reason why there were fewer temperate people after 35 was that people grew into drink That was a fallacy People did not become drunken or intemperate once they had acquired temperance habits up to 35 It was comparatively rare for intemperance to break out after that age, except under stress of circumstances wholly outside the present considerations That gave food for thought and showed that our people were becoming steadily more sober and temperate in their use of alcohol It was really an outrage to call this country a non-sober country

The Desire to Keep Physically Fit

It was said that the diminution of drinking was due to restricted hours and higher prices He agreed that restricted hours promoted temperance He would support the continuation of the restriction of hours, provided that it was made uniform in all districts, but the influence of higher prices was not worth talking about Did a man stop drinking because he had no money ? He made his wife go without money If drink had got such a hold on him he would not stop because of the price What had produced the change to which he had referred was better housing for one thing, because directly they got better housing they got an improvement in respect to drinking The next fact was the increasing love of fresh air and the constant desire on the part of the people to be out in the country There was also the greater companionship of men and women, but he would put above all other considerations the great love of physical fitness at the present time Women had become more athletic owing to the adoption of more sensible clothing, and that had created a desire for physical fitness There they had the key to what could be done at a comparatively small cost. Advantage should be taken of all those forces which he had mentioned Education should be fostered and they should go on improving houses and the chances of those who were less well off to enjoy games and outdoor sports If all these things were done for ten years, and especially if health lectures were given all over the country, then not by fanatics preaching against the evils of this, that, and the other, but by people teaching what health meant, what good food meant, and what the disadvantages of alcohol really were as well as its advantages, they would appeal to the convictions of the people and get far greater success in any campaign for temperance than by the provisions of a Bill such as that before the House

The Earl of Onslow said that the Government were heartily in concurrence with the wishes of the supporters of the Bill, and were no less desirous than they were to secure judicious reform. They could not, however, at the present time assent to a measure which involved the reopening of the controversial question of the amendment of the licensing laws The report of the Southborough Committee on Disinterested Management was just out. It had only been in the hands of the Government a short time There were other matters connected with the licensing laws not dealt with in that report which it would be necessary to consider before any Government could give a pronouncement on the subject.

The debate was adjourned

HOUSE OF COMMONS.

Wednesday, June 15th.

Landlords and Vaccination of Tenants' Children

Mr Thurtle asked the Minister of Health if his attention had been drawn to a recent case in which a landlord obtained an order for possession of one of his dwellings on the ground that the tenant had failed to have one of his children vaccinated, and if he was prepared to amend the law in order to make it illegal for the vaccination of children to be a condition of any tenancy agreement.—Sir Kingsley Wood (Parliamentary Secretary to the Ministry of Health) replied. The answer to the first part of the question is in the affirmative and to the second part in the negative

Tuberculosis in North Wales

Sir Robert Thomas asked the Minister of Health what were the returns of deaths from tuberculosis in North Wales for the years 1919 and 1926, and whether the statistics showed an increase or a decrease upon the figures for the corresponding period before the war—Sir Kingsley Wood replied The figures show a considerable diminution in the death-rate from tuberculosis in each of the six counties in North Wales since 1911 The death-rate from tuberculosis in each administrative county and county borough appears in the Registrar-General's annual reports and statistical review, part I., for the years 1911–1925 The death-rates per million living for 1911, 1919, and 1926 in the six counties in North Wales are as follows —

—	1926	1919	1911
Anglesey	1448	1681	1787
Carnarvonshire	1661	2155	2216
Denbighshire	779	1206	1509
Flintshire	723	1052	1387
Merionethshire	1494	1910	2089
Montgomeryshire	979	1394	1318

Distilled Water in H M Ships

Sir Bertram Falle asked the First Lord of the Admiralty whether each of H.M ships in commission was fitted with an aeration plant for the aeration of distilled water supplied to the ships' companies for drinking purposes or whether the only aeration plants fitted in H M ships were those purchased by the various ships' companies for the purpose of manufacturing aerated fruit juice drinks—Lieut.-Colonel Headlam (Parliamentary Secretary to the Admiralty) replied The arrangements provided in H M. ships for aerating distilled water before it is supplied to the ship's company for drinking purposes are as follows The delivery pipe from the distiller pump is led into a test tank and from thence the water gravitates into the storage tank In both tanks the water is aerated by spraying from the delivery pipe through a special rose into the tank

Thursday, June 16th

Medical Appointment at Dartmoor

Mr Montague asked the Home Secretary how many prison hospital officers were offered promotion and did not accept the post of hospital principal officer at Dartmoor, how many declined; and the number against whom disciplinary action was taken involving forfeiture of promotion to this rank—Sir William Joynson-Hicks replied. The number of officers who declined the offer of promotion to this post at Dartmoor is three No question of disciplinary action arises, but one of the three officers who failed to give reasons satisfactory to his superiors will not in the ordinary course be considered again for such promotion

Inspection of Children's Homes

Mr. Pethick-Lawrence asked the Home Secretary what steps he proposed to take to implement the proposals of the Child Adoption Committee relating to the inspection of homes and institutions for poor children or young persons which were wholly or partly supported by voluntary contributions—Sir William Joynson-Hicks replied I propose to take these recommendations into consideration in connexion with other recommendations made by the Young Offenders' Committee which in both cases involve amendments of the Children Act, 1908

Pensioner and Refusal of Major Operation

Mr Harmsworth asked the Minister of Pensions whether the refusal of a major operation was in any circumstances prejudical to a pensioner's claim for reassessment of his pension, whether, in a recent case the recommendation to operative treatment at Queen Mary's Hospital, Roehampton, was not regarded as restoring the Ministry's view of the pensioner's condition from the time of his previous operation in April, 1924, until November last year, when there was a reported recovery of 10 per cent, and whether he would cause a reinvestigation of the case in the light of the new evidence afforded by X ray examination and treatment in hospital—Major Tryon replied: The penalty provided under Article 4 of the Warrant by way of direct reduction of pension would not be applied in such a case, but a claim to an actual increase of pension on account of an increase of disablement following on the refusal of a course of treatment, considered by my medical officers to be both advisable and reasonable, could not be admitted The condition which was found in hospital last month does not show that the assessment given in November and confirmed by the Medical Appeal Board in December was incorrect and there are no grounds for a reinvestigation.

Local Authorities and Rural Housing

Mr Robinson asked the Minister of Health whether any proposals had yet been submitted by local authorities under the Housing (Rural Workers) Act, and in which counties were houses being reconditioned or extended to provide additional accommodation for workers in rural districts.—Mr Chamberlain replied· Proposals have so far been submitted by 40 local authorities under the Housing (Rural Workers) Act, 1926 Other local authorities have schemes under consideration, but have not yet actually submitted proposals With regard to the last part of the question, statistics as to action taken under the Act are not yet available. The following is the list —

County Councils—Cheshire, Cornwall, Cumberland, Derby, Devon, Dorset, Essex, Gloucester, Hereford, Kent, Lancashire, Lincoln (Holland), Lincoln (Lindsey), Middlesex, Northampton, Northumberland, Somerset, Stafford, Suffolk East, Surrey, Sussex East, Westmorland, Wiltshire, Worcester, Yorks East R, Yorks North R, Yorks West R, Anglesey, Brecknock, Carnarvon, Carmarthen, Denbigh, Montgomery, Monmouth, Pembroke

County Boroughs—Worcester

Rural District Councils—Aylsham R.D C, Isle of Wight R D C, Smallburgh R.D C, Wayland R D C

London Lock Hospital

Lieut.-Colonel Fremantle asked the Minister of Health if he had received complaints with regard to the management of the London Lock Hospital, if he was in a position to reassure the public on the subject; and, if not, in view both of the grants made to it by public authorities and of the national importance of the work which it undertook he would direct an inquiry to be made—Mr Chamberlain replied The hospital in question is a voluntary one and my hon and gallant friend will appreciate that the general management of voluntary hospitals does not come under my review Any grants to this hospital in respect of specific services are made by local authorities, principally by the London County Council. I understand that the council have given notice of withdrawal of their grant in connexion with a general review of their arrangements for the venereal disease service, and I have concurred in their proposed action In these circumstances there seems no reason for any inquiry

Valvular Disease of the Heart among Soldiers

Dr Vernon Davies asked the Secretary of State for War the total number of soldiers invalided under the age of 21 years for valvular disease of the heart during each of the last five years for which statistics were available—

Commodore **DOUGLAS KING** replied The information is as follows —

Year	Total No discharged	No under 21 years of age
1923	90	34
1924	139	50
1925	139	48
1926	101	37
1927 (to date)	29	10

Typhoid Fever in Gravesend District

Mr **DAY** asked the Minister of Health the number of typhoid fever cases notified during the recent outbreak in the Gravesend district, and whether a representative of the Ministry had visited the town —Mr **CHAMBERLAIN** replied Thirty-nine cases of this disease have been notified in the borough of Gravesend during the past five weeks *The answer to the last part of the question is in the* affirmative

MONDAY, JUNE 20TH

Heart Disease in the Air Force

Dr **VERNON DAVIES** asked the Secretary of State for Air if he could give the number of discharges from the Royal Air Force for heart disease for the years 1921 to 1927, the number of such cases under 21 years of age, and the number of cases in which a history of rheumatism was obtained —Sir S **HOARE** replied The following table gives the information requested —

Discharges from the Royal Air Force for Heart Disease (Organic)

Year	Total discharges for valvular and other diseases of the heart	Under 21 years of age	
		With definite history of rheumatism	Other cases
1921	16	1	5
1922	17	5	4
1923	15	4	7
1924	14	6	0
1925	10	5	0
1926	14	2	2
1927 (to date)	8	0	2

These figures do not include 90 cases of heart disease (of which 23 were valvular) who were invalided by the Discharge Board in 1921, but who, from the fact that this was a post-war clearance of medical unfits, probably did not include any under the age of 21 The cases in the third column are those in which, from a scrutiny of individual records, a history of "rheumatism" was obtained

Ex-Service Men and Tuberculosis

Mr **GROVES** asked the Minister of Pensions whether he would consider the issuing of instructions to local tuberculosis medical officers that when ex-Service tuberculosis patients were recommended for a course of convalescent treatment at Douglas Homes, they should be kept on treatment allowances —Lieut -Colonel G F **STANLEY** replied The Homes referred to are not an institution approved by the Ministry of Health for in-patient treatment Men staying in these Homes are not, therefore, eligible for the allowances attaching to this form of treatment

Provision of Open Spaces and Playing Fields

Sir **ROBERT THOMAS** asked the Home Secretary whether he was prepared to introduce legislation to provide that public parks and squares which had sufficient area for playing fields should be thrown open for the benefit of the youth of the country —Sir **KINGSLEY WOOD** replied There are already powers in the general law, which are freely used, by which local authorities may set aside parts of public open spaces under their control for playing purposes, and my right hon friend has every reason to think that local authorities generally fully appreciate the need for playing fields

Medical Research Council and Dogs Act, 1906

Dr **VERNON DAVIES** asked the Home Secretary if he proposed to give effect to the unanimous recommendation of the Medical Research Council contained in Cmd 2880 that Section 3 (5) of the Dogs Act, 1906, should be repealed —Sir W **JOYNSON-HICKS** replied This recommendation has not yet been considered by the Government

Maisons Tolerées at Shanghai

Mr **PETHICK-LAWRENCE** asked the Secretary of State for Foreign Affairs whether he was aware that the Chinese were complaining that girls of 15 years of age were being introduced into masions tolerees for the soldiers in the international area at Shanghai, and whether [illegible] t [illegible] action in the matter —Mr **LOCKER-LAMPSON**, Under Secreta
Foreign Affairs, replied H M Consul-General at Sh
telegraphs that, so far as he and the Shanghai Mu
Police have been able to ascertain, there is no foun
whatever for this report All remaining licences for
of ill-fame in the International Settlement were with
on Dec 31st, 1924, by order of the municipal council.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLA
the primary examination for the Fellowship, held
June 7th to 18th, 180 candidates presented themsel
whom 60 (55 men and 5 women) were approved
following are the names and medical schools of the su
candidates —

A J W Ahern and J P Ainslie, Melbourne and Mid
H S Allen, Cambridge and St Thomas's, P R
Leeds, P B Ascroft and J Aytoun Middlesex
Banham, Cambridge and Middlesex, J G Y Bell
Coll and Middlesex, H C Boyde, St Bart's
Buckley, Cambridge and St Bart's, E A Butte
St Mary's, C E Corrigan, Manitoba and St
A Cruickshank, Aberdeen and St Mary's, T S D
Birmingham and Middlesex, W S Dyson, Cambrid
Manchester, B M Fonseka, Birmingham and Mid
W R Forrester Wood, Cambridge and St Bart's,
Freeman, St Bart's, H W F Freeth, Middlesex
Fripp, Oxford and Guy's, A K Gupta, Calcut
Middlesex R W Haines and Flora Hargreaves,
Coll, H E Harris, Cambridge and St Bart's J
Adelaide and London, G Herbert Cambridg
Thomas's, and Middlesex, S W Holmes St
R L Holt, Manchester and Middlesex G H E
St Thomas's and St Mary's Alison F Z Judd,
Free, V Kathirgamatamby Madras and London
Kem-Yee, Sydney, St Mary's and Middlesex, E
King, Melbourne and Middlesex, R W Kn
Cambridge and Middlesex, G F Langley, Brist
Lewis, Univ Coll and London, A Lister Cam
G H Livingstone, King's Coll and Middlesex,
McKenzie, Otago and Middlesex, G A Mason Durh
Middlesex N M Matheson, Otago and Mid
J P Monkhouse St Mary's, J V O'Sullivan L
B N Pajnigar Bombay and London, L M Parl
Zealand and Middlesex, G E Parker, Cambridge
Thomas's, G C Parkin Durham and Middles
Riddiough, Cambridge, J C Ross, Liverpool,
M Sandes, Royal Free, S Scher Cape Town and Mid
J E Schofield Sheffield and St Mary's N Sinn
Ceylon and Middlesex, C J N Thurgar, Univ Coll
Wake, Bristol, Margaret M White, Royal Free,
Willson-Pepper, Cambridge and St Thomas's
Willway, King's Coll, Joyce R Woods, Royal Fre
H Yousri, Birmingham and Middlesex

ROYAL COLLEGE OF SURGEONS OF EDINBU
At an extraordinary meeting of the College held on Ju
Dr A Logan Turner, the President, in the chair, the fol
were elected honorary Fellows in celebration of the cen
of the birth of Lord Lister the Earl of Balfour, Sir W
Watson Cheyne, Prof Harvey Cushing (Boston),
Théodore Tuffier (Paris), Prof John Stewart (Halifax
Scotia), Sir Robert W Philip, President-elect of the
Medical Association, and Prof George M Robertson
dent of the Royal College of Physicians of Edinburgh

FELLOWSHIP OF MEDICINE AND POST-GRA
MEDICAL ASSOCIATION—On Wednesday, June 29
2 P M, Dr C M Wilson will give a clinical demonstra
St Mary's Hospital, on the same date a surgical dem
tion will be given by Mr J A Cairns Forsyth at the
Waterloo Hospital at 1 30 P M, and Mr A D Griff
give a demonstration in ophthalmology at the Roy
Hospital at 3 P M All these demonstrations are free to
bers of the medical profession An all day intensive
will be provided at the National Hospital for Diseases
Heart from July 4th to 16th, from 10 A M to 4 P M
the entry is limited to 20 A two weeks' course in me
surgery, and the specialties will be held at the Pri
Wales's General Hospital from July 11th, from 10 3
to 5 30 P M daily, the clinical practice of the hosp
open to those taking the course, and on the two Sat
visits may be paid to the mental hospital at New Sout
and the fever hospital at Homerton From July 11
30th a course in proctology will be provided at St M
Hospital Two demonstrations weekly (Wednesdays
Saturdays) will be given at the Park Fever Hospital
July 13th to 30th inclusive From July 4th to 30
West End Hospital for Nervous Diseases will hold a
afternoon course daily at 5 P M A general course of wo
also arranged at the associated hospitals for which a com
hensive ticket is issued and a separate programme publis
Copies of all syllabuses and of the *Post Graduate Me*
Journal are obtainable from the Fellowship of Medic
1, Wimpole-street, London, W 1

ndon Clinical Society —The first annual uster Lecture of this society will be delivered by Sir as Horder at the London Temperance Hospital on ay, July 7th, at 8 45 p m The subject of the lecture be Diet and Dietists The society invites medical itioners to attend this meeting

London Hospital —The Bearsted Memorial ical Theatre will be opened by Viscount Bearsted on afternoon of Wednesday, June 29th, immediately the distribution of prizes at the Medical College by Eustace Percy, President of the Board of Education distribution of prizes will begin at 3 p m

he Malthusian League —On July 26th the husian League (120, Victoria street, London, S W 1) celebrate its fiftieth anniversary by a dinner at the orn Restaurant, and the public is invited to apply tickets (10s 6d) Among the speakers will be Mr Wells, Mr J M Keynes, and Mrs Annie Besant

aining of Mental Defectives —A lecture ed Training Defective Children to Become Useful ns will be given by Dr Maria Montessori in aid of Royal Free Hospital Centenary Fund at the Æolian , Bond-street, London, W 1, on Tuesday, July 5th, 15 p m Lady Barrett will take the chair Tickets are able from the Æolian Hall Box Office or from the on (R F H) School of Medicine for Women, 8, Hunter- , W C 1

ing Edward's Hospital Fund for London — pecial committee appointed to inquire into the question y beds at voluntary hospitals has begun to receive ce The members of the committee are Viscount eden (chairman), Sir John Rose Bradford, P R C P, ernard Mallet, Mr V Warren Low, F R C S, and Winifred Cullis All communications should be ed to the secretary of the Fund, G P O Box 465a, brook, E C 4

yal Westminster Ophthalmic Hospital — rsday, June 30th, at 4 p m, the Duke of Connaught y a commemoration-stone in the entrance hall of the building now rising in Broad-street, Bloomsbury the ceremony a reception will be held in the out- consulting room of the new building, which is as y one story in height It is hoped that it will be or occupation by March 25th, 1928, when the present in King William-street, Strand must be vacated

pital and a Penny Fund —Three years ago y fund was started in connexion with the Victoria l at Lewes The number of subscribers last year proximately 3400, and the amount received in sub- ons was £785 After paying expenses and the cost of nt of subscribers in hospitals at Brighton, £769 was over from the fund towards the hospital's expenses ted that the institution has received £2512 7s 11d ovember, 1923

Infirmary for Dewsbury —On June 18th ndation stone of a new infirmary for Dewsbury and was laid by Sir Mark Oldroyd, whose contribution building fund amounts to £13,000 The scheme will ,000, and towards this sum £28,000 has been from the sale of the old infirmary and £21,000 n subscribed by local effort The new infirmary e accommodation for 100 beds and a nurses' home of 50

al Medical Benevolent Fund —The following e additional cases relieved at the last meeting —

, aged 54, of M R C S who died in 1925 When her band's estate is settled she expects to receive about week At present living on capital Has been living ds for some time, but now has a room the rent of which week Voted £10

aged 65, of F R C S who died in 1912 At present is ks for expenses to go to a convalescent home Total 60 per annum Voted £5

, aged 70 of L R C P who died last month Late l was an annuitant of the Fund Applicant only has Age Pension Voted £26 in 12 monthly instalments

iptions may be sent to the Treasurer, Sir Charters ds, at 11, Chandos street, Cavendish square, London,

ial Medical Benevolent Fund of Ireland — annual meeting of this Fund was held at Dublin on 16th, Dr Bethel Solomons in the chair It was stated the number of grants made during the year was 81, mount disbursed amounting to £1702 1s 8d During ear the Fund lost several friends and subscribers, he committee is making an appeal for wider support profession

University of Manchester —Dr A W Downie has been appointed lecturer in bacteriology, and Dr J M Yoffey demonstrator in anatomy

University of Durham —In the third examination for the M B, B S degree held recently, R S Holcombe satisfied the examiners in Pathology and Bacteriology, Materia Medica, Pharmacology and Pharmacy, Public Health, and Medical Jurisprudence, and Maurece Lees and J H F Pankhurst were approved in the same subjects with the addition of General Principles of Therapeutics

University of Geneva —A holiday course for candidates in medicine, surgery, and the specialties is to be held at Geneva from Sept 5th to 30th Information can be obtained from the secretariat of the University

International Medical Post-Graduate Courses A series of post-graduate courses will be held at Berlin between Sept 15th and Oct 31st under the auspices of the Kaiserin-Friedrich-Haus, 2–4, Luisenplatz, Berlin, N W 6 Particulars will be supplied on application

Dr Robert de la Poer Beresford, J P, medical officer of health for the urban and rural districts of Oswestry, has resigned this office after 54 years' service

Royal East Sussex Hospital —It has been decided to proceed at a cost of £5500 with the provision of an orthopædic department The scheme will also include an isolation ward

Derby Poor-law Hospital —The Derby guardians proposed to build a new hospital at a cost of £120,000 The Minister of Health has, however, declined to sanction the expenditure of more than £80,000, on the ground that insufficient reason has been shown for proceeding with the larger scheme

Herefordshire General Hospital —This institution is to be enlarged at an estimated cost of £64,000, which is to be provided by the sale of its securities A special appeal for money is, however, to be made The hospital's recently established contributory scheme has been well received and is making good progress

Central London Throat, Nose, and Ear Hospital —At the annual meeting last week it was stated that about half of the £35,000 required for the new wing has still to be raised, and that the in-patient pressure is constantly increasing The wing will provide increased facilities for training specialists in the post-graduate medical school, which has already sent out 1432 students

Enlargement of Leeds Maternity Hospital In 1905 this institution began as a small nursing home with six beds, five years later it was enlarged, and last year 25 per cent of the Leeds babies were born there The pressure has now become so great that the number of beds is to be increased from 75 to 102 A new wing is to be added on each side of the central block, and a new out-patients' department provided, together with an isolation block and a new operating theatre

Extension of Louth Hospital —Princess Helena Victoria has opened an extension of the Louth and District Hospital which, it is claimed, will place the neighbourhood in possession of hospital facilities not usually available in a town of less than 10,000 inhabitants The former 36 beds have been increased to 56, and the extension consists of a maternity ward, a children's ward, an X ray department, accommodation for a larger nursing staff, and a doctors room, there are two private maternity wards

Newton Abbot Hospital Visit of the Prince of Wales —During his visit to the West of England last week the Prince of Wales opened a new wing of Newton Abbot Hospital and Dispensary, the second hospital in England to be endowed with a stock of radium. The new wing, which is to be especially devoted to the treatment of cases of cancer, includes eight private wards, further accommodation for nurses, considerable enlargement of the men's and women's wards, and their division into surgical and medical wards, and the conversion of the old dispensary into ophthalmic and dental departments

Medical Tour to Italian Spas —A visit of medical men to Italian spas and climatic resorts is being arranged for next September The party will be accompanied by English-speaking Italian doctors and the tour will be made by special train Among the places included in the itinerary are Rome, Naples, Agnano, Capri, Sorrento, Fiuggi, Messina, Taormina, Palermo, and Montecatini Ladies may join the party, but only a limited number of applicants can be accommodated Further information is obtainable from the Italian State Tourist Office, 16, Waterloo-place, Regent-street, London, S W 1

ROYAL FREE HOSPITAL CENTENARY APPEAL —The Old Bloomsbury Revels and Market will be held at the Foundling Hospital, Guildford-street, London, W C, from 2 P M on June 23rd, 24th, and 25th, for the benefit of this Appeal A Handel Concert will be given at 5 30 P M on each day, when the London Chamber Orchestra will play and a scena from the opera "Julius Cæsar" will be produced by Mr Nigel Playfair Further particulars may be obtained from the organiser of the Appeal at 170 Piccadilly, London, W 1

MEDICAL GOLFING SOCIETY —The annual summer meeting was held on June 10th at Walton Heath where competitors were the guests of Lord Riddell There were over 100 entries The competition results were as follows THE LANCET Challenge Cup, H T P Kolesar, Henry Morris Challenge Cup E Playfair, Milsom Rees Challenge Cup V E Negus Handicap results were —Class I First Prize, Sir Kenneth Goadby tied with A W Soper, Best Last Nine, H D Gillies Class II First Prize, H A Chodak Gregory tied with G Dawson, Best Last Nine, H L Hatch Foursomes were won by J O'Malley and W A Tindal Atkinson

IRISH MEDICAL ASSOCIATION —The annual meeting of this association was held on June 16th at Dublin, the President, Dr F C Purser, and subsequently Dr H T Warnock, presiding The report of the Council and the financial statement for the year were read and approved The membership on Dec 31st, 1926, was 415, and the subscriptions paid during the year amounted to £535 10s The results of the election of the officers and Council were read Dr Hugh T Warnock, of Donegal, and Mr P E Hayden of Dublin, were unanimously elected President and Vice-President respectively A discussion took place with reference to the promotion of Poor-law medical officers, and a resolution was carried, asking the Minister for Local Government and Public Health to refuse his sanction to any promotion unless he was satisfied that it was being made on proper grounds A further resolution was carried demanding that the rates of remuneration of registrars of births, deaths, and marriages should be raised to the level of the fees payable in England A long discussion followed on the status and emoluments of county hospital surgeons A resolution was carried demanding that the salary of whole-time county hospital surgeons should be not less than £1000 a year

RADIUM TREATMENT AT UNIVERSITY COLLEGE HOSPITAL —Dr A E B Paul, Harker-Smith Registrar to the hospital, has compiled a report of the results of radium treatment in the hospital, with special reference to carcinoma of the cervix and menorrhagia The report is divided into five parts Part 1 gives a "follow up" of the results to Oct. 31st, 1926, of all cases of carcinoma of the cervix, carcinoma of the uterine body, and one case each of carcinoma of the vulva and sarcoma of the vagina which were treated with radium from 1921 to October, 1925 Part 2 gives the results of treatment for menorrhagia, fibroids, and dysmenorrhœa since November, 1924, and Part 3 the cases of carcinoma of the cervix and uterine body treated for the first time with radium between Oct 31st, 1925, and Oct 31st, 1926 Part 4 gives results of cases of menorrhagia (menopausal and essential), fibroids, dysmenorrhœa, and cervicitis treated for the first time between Nov 1st, 1925, and Oct 31st, 1926, and Part 5 deals with various recent isolated cases Of the 62 inoperable cases of carcinoma of the cervix discussed in Part 1, four could not be traced Of the remaining 58, 52 are dead, the average length of life from the date of the first treatment being 15 months Three cases are alive and have no clinical signs of recurrence after 25, 24, and 20 months respectively The other three cases still alive have recurrences 40, 17, and 16 months after first radiation Dr Paul states that it has been repeatedly noted that the treatment has rendered the patient more comfortable, especially as regards the lessening of hæmorrhage, and in many cases the alleviation of pain Out of 13 operable cases of carcinoma treated with radium only seven are alive and have no recurrence at the end of 13, 40, 29, 24, 22, and 12 months respectively, and one case is alive after 47 months, but has a recurrence With regard to non-malignant cases, the results of treatment by radium in cases of menopausal hæmorrhage are said to be extremely good, only a very few cases requiring a second dose The usual dose now given is 3000 to 3600 mg -hours of the salt, and the technique of plugging the cervical canal as well as the vagina is now standard practice The results of radium when used in *cases of* essential menorrhagia are also encouraging Cases of fibroids vary much as regards results, out of 20 cases first treated over one year ago, 12 have shown good results as regards the cessation of hæmorrhage, three requiring further doses before this was attained

Medical Diary.

Information to be included in this column should *in proper form on Tuesday, and cannot appear if it* *us later than the first post on Wednesday morning*

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole street, W

THURSDAY, June 30th —8 P M, ELECTRO THERAP The Mackenzie Davidson Memorial Lecture wi delivered by Sir Humphry Rolleston on Protectio other Radiological Problems

SATURDAY, July 2nd —DISEASES IN CHILDREN Provi Meeting at the Royal Alexandra Hospital for Children, Dyke road, Brighton

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

NORTH-EAST LONDON POST-GRADUATE COLL Prince of Wales's General Hospital, Tottenham, N

MONDAY, June 27th —2 30 P M to 5 P M, Medical, Surg and Gynæcological Clinics Operations

TUESDAY —2 30 P M to 5 P M, Medical, Surgical, Thr Nose, and Ear Clinics Operations.

WEDNESDAY —2 30 P M to 5 P M, Medical, Skin, and Clinics Operations

THURSDAY —11 30 A M, Dental Clinic 2 30 P M. to 5 P Medical, Surgical, and Ear, Nose and Throat Cli *Operations*

FRIDAY, July 1st —10 30 A M, Throat, Nose, and Clinics 2 30 P M to 5 P M, Surgical, Medical, Children's Diseases Clinics Operations

FELLOWSHIP OF MEDICINE AND POST GRADUA MEDICAL ASSOCIATION, 1, Wimpole street, W

MONDAY, June 27th, to SATURDAY, July 2nd —Fel SHIP OF MEDICINE DEMONSTRATIONS Wed, 2 P M, at St Mary's Hospital, medical demonstr by Dr C M Wilson Wed, at 1 30 P M., at Royal Waterloo Hospital demonstration by Mr J C Forsyth Wed, at 3 P M, Royal Eye Hospital demonstration by Mr A D Griffith. The demonstrations are free to all members of the medical profes —CITY OF LONDON HOSPITAL FOR DISEASES OF T HEART AND LUNGS, Victoria Park, E., Special cou in all branches of diseases of the chest, facilities for day study Syllabus on application

HOSPITAL FOR SICK CHILDREN, Great Ormond street W C

THURSDAY, June 30th —4 P M, Mr Higgins Some Mi Deformities

ROYAL NORTHERN HOSPITAL, Holloway-road, N

TUESDAY, June 28th —3 15 P M, Dr W H McKinstry and Dr P O Ellison Clinical Pathology

LONDON SCHOOL OF DERMATOLOGY, St John's Hospital 49, Leicester square, W C

TUESDAY, June 28th —5 P M, Dr A M H Gray Th Sarcoids and Lupus Pernio

THURSDAY —5 P M, Dr J M H MacLeod Leprosy

TUESDAY, July 5th —5 P M, Dr G B Dowling Fungu Infections of the Skin

Appointments.

Queen Charlotte's Maternity Hospital SANKEY, J N, MB Ch B, F R C S Eng, Senior Resident Medical Officer TREE, J R., M B, B S, Assistant Resident Medical Officer

University of Sheffield KERR, W S, M B Edin F R C S Edin. Lecturer in Diseases of the Ear, Nose and Throat

Vacancies.

For further information refer to the advertisement columns

Barry U D C Accident and Surgical Hospital —H S At rate £200

Birmingham University —Walter Myers Travelling Studentsh £300

Bodmin, Cornwall County Mental Hospital —Asst M O £3

Bolingbroke Hospital, Wandsworth Common, S W —Res M O £200

Bradford, Royal Eye and Ear Hospital —Res H S £120

Bradford Royal Infirmary —Res Surg O £250

Buxton, Devonshire Hospital, —Asst H P At rate of £150

City of London Hospital for Diseases of the Heart Victoria Park, E —Asst Tuberculosis O £600

Cornwall —Tuberculosis Officer, Locum £50

Farringdon General Dispensary, Holborn Circus, E C —P in charge of Dept for Children's Diseases

Gloucestershire, Royal Infirmary and Eye Institution, Gloucester —Res H P At rate of £150 *rn and Finsbury Hospital, Archway road, N*—Second Asst M O £300

n Medical Service—Appointments

Public Dispensary—Jun. Res M.O. £150

on Temperance Hospital, Hampstead road N W—H P At rate of £100 Also Cas. O At rate of £120

B, Infectious Hospitals Service—Asst. M O's £500

chester Crossley Sanatorium, Delamere Forest, Cheshire—Asst. M.O £200.

chester Ear Hospital—Hon. Asst S

llesex Hospital Medical School, London, W—Second Demonstrator for Physiology Dept £350

s Department, Westminster, S W—Medical Inspector of Mines and Quarries £750

stry of Health—M O £600

Delhi, India Lady Hardinge Medical College—Clin Pathologist Rs 450 per mensem

h Wales Sanatorium, Llangwyfan, near Denbigh, N Wales—Asst Res M O £200

ar, Metropolitan Borough of—Consulting Phys 2½ guineas per attendance

ton and County of Lancaster Royal Infirmary—H S At rate of £150

l Army Medical Corps—Commissions

l Free Hospital, Gray's Inn-road, W C—Cas O £100 Asst P to Electro-Light and Massage Depts Also Clin Assistantships

al Northern Hospital, Holloway, N—Surg to Ear, Nose, and Throat Dept Also P.

Mark's Hospital for Cancer, &c, City-road E C—Clin Assts

field, Jessop Hospital for Women—Two Asst H S s Each at rate of £100

nford, Rutland and General Infirmary—H A. At rate of £200

an Government Wellcome Tropical Research Laboratories, Khartoum—Asst Bacteriologist £E.720

on Surrey, Downs Hospital for Children—Jun Asst M O £500

nsea County Borough—Asst M O £600

versity of London—External Examinerships

toria Hospital for Children, Tite-street, Chelsea, S W—P H and H S Each at rate of £100

wickshire County Council—Asst County M O H. £600

st Bromwich and District Hospital—Hon. S to Ear, Nose, and Throat Dept, and Hon. Orthopædic S

st London Hospital, Hammersmith-road, W.—Res Asst S £200

stern Ophthalmic Hospital, Marylebone-road, N W—Hon Asst Anæsthetist

e Chief Inspector of Factories announces a vacant appointment for a Certifying Factory Surgeon at Ossett, York (W R)

irths, Marriages, and Deaths.

BIRTHS

IBSON—On June 17th at a nursing home, Worthing, the wife of Charles Gibson, F R C S Edin of a daughter (stillborn)

ILLIAMS—On June 16th at Harley street, to E Christine Pillman Williams, M.B, B S, the wife of Dr E. Ulysses Williams—a son.

RIGHT—On June 16th at Farnham Royal, the wife of A. J Wright, M.D, of a daughter

MARRIAGES.

OCKING—COUCHER—At Paddington Chapel Marylebone-road, on June 15th Dr F D M Hocking M B BS M Sc Lond., of 37, Welbeck street W 1 Assistant Pathologist to the Westminster Hospital to Amy Gladys, youngest daughter of A. T. Coucher Esq of Harrow

EAD—SUTCLIFFE—On June 18th, at Trinity Presbyterian Church, Clapham road Dr Kenneth V Mead to Marjorie Mackinnon only daughter of Mr and Mrs James Sutcliffe, of Elms road Clapham Park London

TEWART—FRASER.—On June 16th at St Michael's Church, Sprouston William Ross Stewart M.B, F R C S E, Major, I M S, to Margaret Jean Denholm Fraser eldest daughter of Rev D Denholm Fraser, M.A, and Mrs Fraser, The Manse Sprouston.

WINDELL—GLEGG—On June 15th at St Mary's Cathedral Glasgow, Ralph Stanley Swindell M B BS Lond. to Dorothy only daughter of the late Sheriff A. T Glegg and of Mrs A. T Glegg of Lilybank gardens, Glasgow

DEATHS

BEST—On June 13th very suddenly, at St Ives, Palemon Best M R C S, L R C P aged 59

DAVIDSON—On June [illegible]th at Bickenhall mansions W., Ellen Alison widow of Alexander Davidson, M D, F R C P of Liverpool aged 71

FRASER—On June 15th, at Banbury Oxon, Edward Fraser, M R C S, L S A aged 92

GORDON—On June 19th James Edward Gordon O B E., M R C S, L R C P of Endless street Salisbury, aged 55

JESSETT—On June 17th at Orchard House Fleet Frederic Bowman Jessett F R C S Eng in his [illegible]th year

LEACH—On June 11th at The Gables, Graffham, Sussex, John Leach M A M B, C M

N B—A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

Notes, Comments, and Abstracts.

SUPPORT FOR THE SEDENTARY.

THERE was once a time (if biologists are to be believed) when our ancestors ran about on all fours The habit was then fashionable, and it is not for us to blame them, it would be impious to disinter the family skeleton merely to mock at it All the same, it was certainly a change for the better when the function of support was relegated to the hind limbs, and at a small sacrifice of speed and steadiness two sensitive hands were given their freedom To the untrammelled activity of our fingers we owe, perhaps, the most of our intellectual development—a thesis ably maintained by Prof F Wood Jones in his book, "Arboreal Man"—and the advantages of bipedal transport must be obvious to anyone who gives a moment's thought to the relative efficiency, in modern social circles, of the horse's hoof and the human hand.

A great deal has been written about man's assumption of the erect posture; its benefits have been set out at length in scientific literature, and its regrettable effect on the abdominal organs has been freely ventilated of late years in the daily newspapers It seems the more astonishing, therefore, that but little attention has been paid to another profound biological adaptation that is taking place in our midst Our quadruped forefathers, it must be supposed, needed long persuasion by the forces of nature before they would trust themselves to the sole support of two hind feet, and many ages have gone by since this momentous adjustment was completed Yet in a few short years a large proportion of the human race—and those which were most highly developed—have been carelessly converted into sedentary animals, and hardly anyone seems to have noticed that this can be regarded as the beginning of a fundamental change in our anatomical evolution At first (as we have remarked) man supported himself on four feet, then he relied on two, and now, in London at any rate, he supports himself, whenever possible, upon his back or the lower part of it. From being a biped—which was really not unsatisfactory—he has become, so to speak, a binate Should this change go on much further, it will mean the release of a second pair of limbs from the bondage imposed by stability; but unfortunately the strenuous service of our feet throughout the centuries has somewhat impaired their flexibility, and we cannot look forward with any certainty to having descendants with four hands in everyday use.

It is not suggested, of course, that the change described is as yet complete, even those of us who daily spend eight and a half hours lying down and 15 hours sitting up are by no means incapable of movement on the legs, we remain facultative bipeds though primarily binatile. Even now there are but few people whose legs are wholly functionless, for one thing it is hard to arrange mechanical transport for every sort of journey, for another, we are as yet too ill-adjusted to our environment to dispense with artificial exercises of the limbs and trunk. Nevertheless, the amount of movement which is possible for the average office-worker is so small that it is of very real importance how he sits and what he sits on. The havoc wrought in the abdomen by man's becoming erect is nothing to what is being done by his collapse into a spineless curve

To those who spend much of their days in walking or riding on horses it does not matter much how the body is disposed at other times, it may be allowed to take up a position of full relaxation in the easiest chair that the wit of man can devise. It is otherwise, however, with the person whose fatigue springs not from exercise but from the lack of it—whose spinal and abdominal muscles have lost their tone from general lethargy and from disuse With such a person, when at sedentary work, an attempt should be made to break the sagging habit True cure can only be brought about by bringing back muscular tone and well-being, but this does not mean that no support to the back is permissible Properly planned, a chair may do much not only to prevent the bad posture which springs from fatigue, but also to overcome it The muscle which is regaining tone cannot be expected to keep the back straight for long periods unaided, and its owner requires *constant* reminders from his chair if he is to make the conscious efforts which are needed for its re-education

Most ordinary chairs, in spite of the time to be spent in them, are made so unwisely that the tired body can only find rest by falling forward into a bad position Recognition of this fact has led the Rev. W A. Simcox (of Sunnycroft Forest Corner, Ringwood) to devise a new model which he calls the Convex Health Chair and which he strongly recommends for general use Where the backs of many chairs are concave, to fit the curve of the relaxed shoulders, the back of Mr. Simcox's chair is convex, so that from the lumbar region upwards the spinal column remains more or less in contact with the chair, but the shoulders get no support unless they are thrown backwards, their roundness being thus corrected To the person who sits back on this chair there is a perpetual encouragement to place the body in a good position, thus incidentally increasing the depth of respiration, and the feeling of support is compensation for the lack of soft repose Unfortunately, however, it remains possible to sit on the front of the chair and ignore the back altogether, so that the spine droops and the shoulders fall forwards, and Mr Simcox's design for this reason does not wholly solve the problem presented by the person who sits writing at a table, for whom an adjustable chair, offering support at the lumbar curve alone, is probably the ideal As furniture for a dining room or living room, Mr Simcox's model has much to recommend it, however, and experiments of this kind are worth the serious consideration of all who realise how much damage is done by chairs which connive at deformity instead of persuading into rectitude If we are to live in our chairs let us at least have them habitable

GOLD COAST HEALTH REPORT

A REPORT, prepared by Mr G C du Boulay, acting Colonial Secretary, on the affairs of the Gold Coast for 1925–26, has been issued by the Colonial Office From the medical and sanitary section some interesting particulars are gathered, registration of births and deaths is compulsory in 19 towns The number of births registered in 1925–26 was 2914, and of deaths 3811 There were 142 stillbirths The chief causes of death were, as usual, pulmonary and intestinal diseases The number of European residents was 3104, of whom 994 were officials, 1529 merchants, 469 miners, and 112 missionaries Among them there were 22 deaths, whilst the invaliding rate averaged 10 27 per 1000 The eight deaths amongst European officials were due to septicæmia (2), blackwater fever (1), heart failure (1), drowning (1), chronic alcoholism (1), hepatitis (1), and suicide (1) Of the 14 deaths amongst European non-officials 3 were due to blackwater fever, 3 to malaria, 2 to dysentery, and 1 each to intestinal obstruction, fractured spine, yellow fever, perforated duodenal ulcer, drowning, and amœbic abscess of liver The total population, at the census taken in 1921, was approximately 2,296,400 Outbreaks of epidemic disease occurred during the year in various places Eight cases of yellow fever were reported —viz, four cases at Accra, two at Nsawam, and one each at Winneba and Cape Coast Extensive outbreaks of smallpox occurred in Ashanti and the Northern Territories 311,927 vaccinations were performed, of which 98,869 were reported as successful, giving a percentage of 31 69 The efforts of the medical and sanitary authorities in promoting the treatment of disease and the knowledge of general hygiene continue to exercise a beneficial effect on the general health of Europeans Most of the large towns were in a fairly satisfactory sanitary condition 405,228 houses were inspected during the year and the average larval index was 0 78 per 100 The drainage of Saltpond Lagoon—a long-needed sanitary measure—was commenced The congested area at Cape Coast, which was demolished in 1924–25, was laid out and drained At Kumasi, in Ashanti, a temporary market, new wells, and a number of sanitary structures were provided At Accra the mean shade temperature was 79 1°, and at Kumasi and Sekundi 79° and 80° respectively

The rainfall was at Accra 36 54 inches, at Aburi 57 22, at Sekundi 43 71, at Axim 69 41, at Tarkwa 59 11, at Kumasi 67 24, and at Tamale 45 77 The climate, though hot and damp, is cooler than that of most tropical countries situated in the same latitude It is not in itself unhealthy, but an evil reputation has been earned for it in the past by the prevalence of mosquito-borne diseases, against which all possible precautions have constantly to be taken The Gold Coast is peculiarly free from any of the discomforts associated with tropical countries, hot nights and intense heat by day are the exception rather than the rule, while insects are comparatively unobtrusive The rainfall varies with the configuration of the country The first rains, or rainy season proper, begin in March and end in July, the later rains are spread over the months of September and October The rainy season is marked by a considerable fall in the temperature, which is found to be refreshing to many Europeans, but proves trying to some There are eight European hospitals, 27 African hospitals, and one infant welfare hospital During the year 3174 Europeans and 94,736 Africans were treated in the hospitals and dispensaries of the colony The daily average number of patients in the Accra Lunatic Asylum was 227 1 There were 49 deaths—48 males and one female

The Gold Coast is divided into three parts—Gold Coast Colony, area 23,490 square miles, Ashanti, area 24,560 square miles, and the Northern Territories, area 30,600 square miles To this is now added the narrow strip of Togoland—area 13,040 square miles—administered by the Gold Coast Government under the Mandate allotted to Great Britain by the Peace Treaty

HOW TO REMAIN YOUNG.

THE preoccupation of the elderly with the idea of becomin young again appears to be one of the dominating themes a the present day in the emotional life of civilised communitie The space given to attempts at rejuvenation in the popula press reflects to some extent the general interest in th subject Hence a popular book called "Outwitting Middle Age,"[1] by Mr Carl Ramus, a surgeon in the U S Public Health Service, ought to have a wide appeal The title is somewhat misleading, however, for the book is really concerned with preserving comfortable middle age and preventing the onset of senile decay It is strongly provocative in places, dealing with such debatable subjects as Steinach's operation, historical cases of great longevity and some aspects of the diet problem, but it is certainly interesting throughout even if its by-paths into the subconscious mind and psycho-analysis seem a little too far from the beaten track A good bibliography is included so that anyone to whom old age is a dreaded nightmare can obtain quite a lot of information as to how its arrival may be postponed or prevented.

TRAINING WORKING GIRLS IN HUNGARY

THOSE interested in the work of the "Save the Children" Fund will remember Mme Julie Eve Vajkai's booklet "Child Saving and Child Training" Her latest book "Education for Life,"[2] is a further fascinating account of her work-schools in Budapest She started with a random collection of girls in some old military huts, under the most heart-rending conditions of after-war poverty and distress After a desperate struggle to find handicrafts which they could learn quickly and make money by, she has at last succeeded in establishing her schools firmly enough to be able to bring education into first place and relegate earnings to second Her one aim is to prepare the children in the best possible way for their future, which is the work-room or factory, and her success is due to her skill in estimating the creative capacity of her individual pupils and grading their instruction accordingly, so that they always have, from the start, the stimulus of successfully achieving something useful Her girls have received glowing praise from employers all over Hungary for their productiveness, enthusiasm, and adaptability For instance, an electric lamp manufacturer employed some girls who had learnt to make pillow-lace at the school, and was amazed at the speed with which they picked up the totally different technique of his own trade Her secret lies in knowing how to train girls to like work, self-government and team-work is carried to a perfection rarely seen even in this country This experiment now includes nine work-schools and a reformatory, but of greater importance than the immediate work is the interest it has aroused in the Government and the Association of Hungarian Manufacturers There is, indeed, a fair prospect that it may lead to a wholesale and salutary reform in the spirit not only of the national education, but also of the national industry

MEDICAL TREATMENT OF GLAUCOMA

FOR some years Dr Charles Abadie has held that glaucoma is due to disturbance of innervation of the ocular sympathetic, giving rise to an exaggerated dilatation of the vessels of the eye and consequently to hypersecretion of intra-ocular fluids and an increase of tension He therefore treats the condition with vasoconstrictor drugs[3] and claims good results from the combined administration of 1 5 to 2 0 mg of adrenalin (according to the age and weight of the patient), a cachet of 0 1 to 0 2 g of ergotin, and 1 to 2 g of calcium chloride in aqueous solution So far, according to Dr Abadie, this treatment has been found beneficial in every case he has treated Not only is the glaucoma relieved or its development hindered, but there is a considerable gain in visual acuity, especially in the early stages

So long ago as 1897 Abadie brought forward a theory of glaucoma according to which the hypertension depended on a vascular disturbance Subsequently he suggested operation on the ciliary nerves It has been found that removal of the superior cervical ganglion is followed by decrease of intra-ocular pressure, but the effect is only temporary

The theory of hypersecretion as the cause of glaucoma does not tally with the generally held opinion which ascribes it to a blockage in the channels of exit of the intraocular fluid, nor with the theory recently put forward by Dr Duke Elder (see THE LANCET, June 11th, p 1250), who combats the view that true secretion takes any part in its formation at all

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[1] London George Allen and Unwin, Ltd 1926 Pp 269 7s 6d

[2] The Weardale Press, 26, Gordon street, London W C 1 Price 1s.

[3] [illegible] xcvii, p 380

S.M.S MEDICAL COLLEGE, JAIPUR

S. M. S. Medical College Library
33296